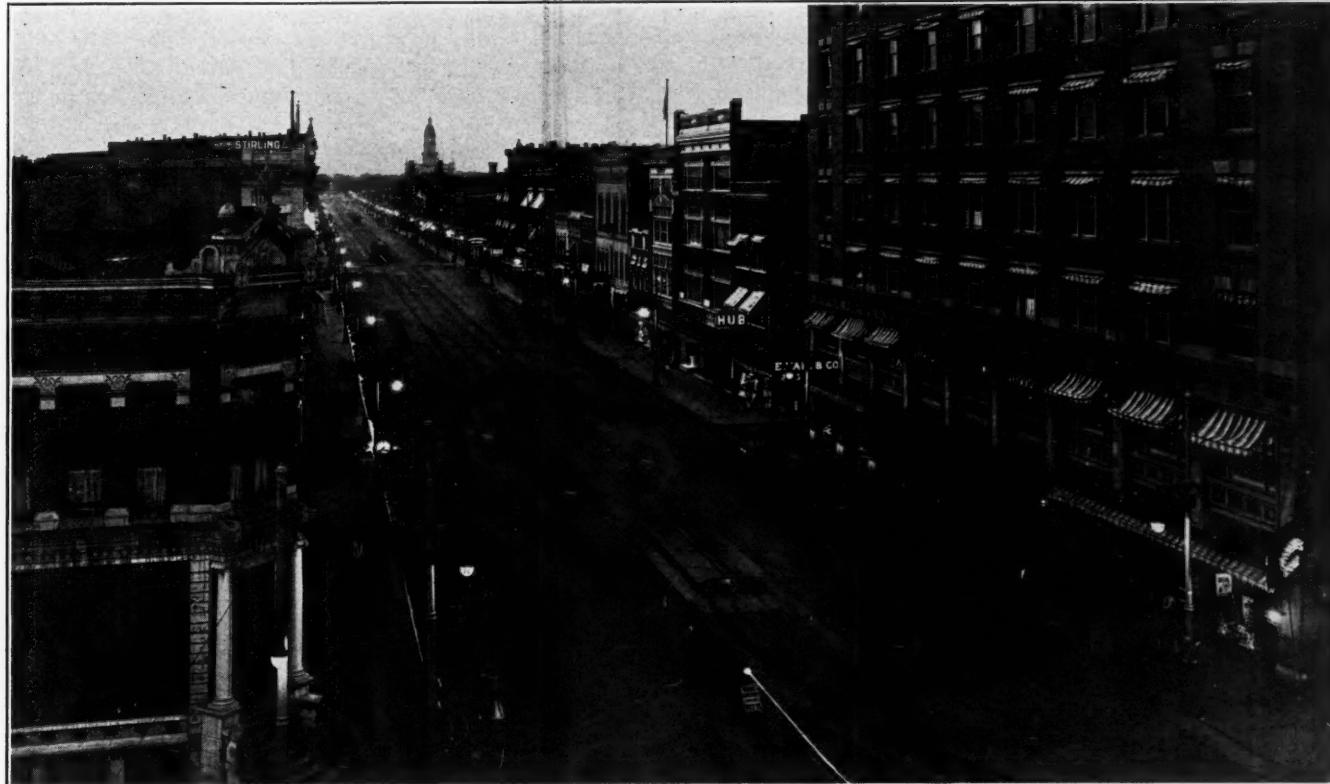


# Municipal Journal

Volume XXXVI

NEW YORK, APRIL 23, 1914.

No. 17



MAIN STREET, WICHITA, KANSAS, SHOWING LAMPS ON TROLLEY POLES.

## SPECIAL ILLUMINATION AT WICHITA

By City on Petition of Property Owners—Distribution of Costs Among Owners, Street Railway, Telephone, Telegraph and Lighting Companies—Special Designs for Poles—Magnetite Arc and Tungsten Lamps

By BERT C. WELLS, City Engineer.

The city of Wichita, Kansas, has just completed its fourth district of special street illumination. Two of the districts are lighted with arc lamps on steel poles in co-operation with the street railway company, and two small districts with tungsten lamps on cast iron ornamental poles. Our total special illumination system or "white way" consists of 282 arc lamps and 126 tungsten lamps, of which 85 lamps burn from dusk to dawn and 323 lamps burn from dusk to midnight.

Early in 1911 the state legislature of Kansas passed an act authorizing cities of the first class to illuminate certain districts in addition to the system of street lights usually maintained. The act provides that the property holders on a street may petition the city commission for special illumination, which petition must be signed by the resident owners of not less than one-half the feet owned by resident owners fronting or abutting on the street to be lighted. After such petition has been filed, the commission must pass on it as to its sufficiency and

advisability and should it be sufficient and advisable they decide upon the kind of lights, number, etc., and contract for the work. As to dividing the cost, the act provides that "the cost of constructing, installing and equipping such additional system of lights shall be assessed against the lots or pieces of land abutting on the portion of the street described in the petition according to the front feet thereof" and that "when said lights are so installed, the city shall operate them and the cost and expense of maintaining and operating such additional system of lights and of so illuminating such street shall be paid by the city out of the revenue allowed from a tax levied for such purposes."

Following the passage of this special illumination act and proper petitions from property owners for special lights, the city commission ordered all wooden poles removed from the following streets: Main street, from English street to Murdock avenue; Market street, from Douglas avenue to First street; Lawrence avenue, from

English street to First street, and Douglas avenue, from Seneca street to Cleveland avenue; a total of 37 blocks or 16,485 feet (3.1 miles) in length.

This order affected the street railway company, the Bell Telephone Company, the Postal and Western Union Telegraph Companies, the Kansas Gas and Electric Company and the city's Fire and Police Departments. Agreements were then made with various corporations so affected with the following results:

The telephone and telegraph companies constructed underground systems in adjacent alleys; the street railway company furnished steel poles from which their trolley wires could be suspended as well as the arc lamps; the Kansas Gas and Electric Company constructed conduits under the sidewalk on either side of the street, giving the city one duct for the use of the Fire and Police Departments. The property owners were charged with the cost of ornamentation placed on the steel poles and one-third the cost of painting. The street railway company paid for the steel poles and two-thirds of the painting, and all the remaining expense was borne by the Kansas Gas & Electric Company, to which was given a five-year contract to furnish current for and maintain the lamps.

The poles of the arc district are tubular steel poles 29 and 30 feet in length set in the ground six feet in a concrete base two feet square and six feet long. In setting the poles, the two-foot square holes were dug four inches too deep and six inches of concrete was placed in the bottom of the hole, in which a circular block of wood of the diameter of the pole was imbedded and carefully placed to the correct line and grade. This concrete was allowed to set one day, when the block of wood was removed and the pole set in the depression so formed in the concrete. The top of the pole was lined with a transit, allowing a rake of six inches to be taken up by the pull of the trolley span wires. After the encasing concrete was thoroughly set, the span wires were attached to the top of the poles and given about one thousand pounds tension, leaving the poles standing almost perpendicular. The poles are spaced as near one hundred feet apart as practicable.

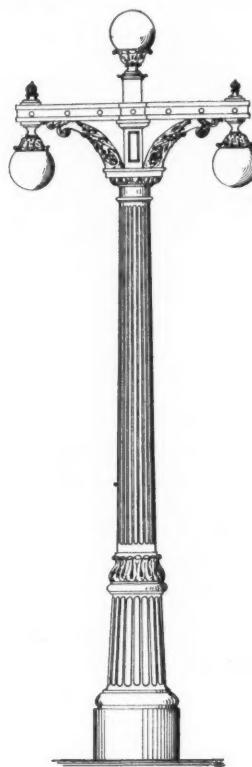
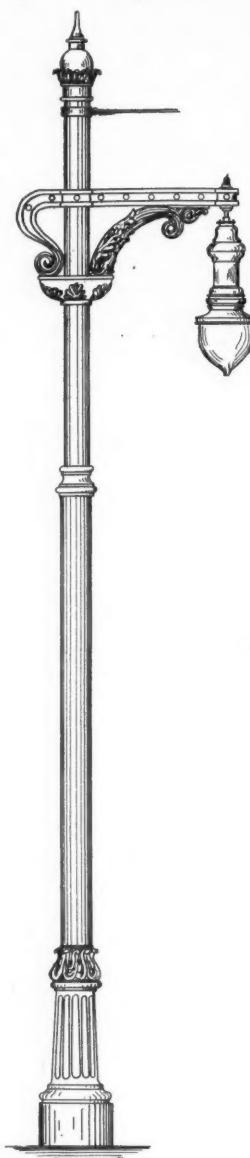
The conduits placed beneath the sidewalks are the Johns-Manville Company 2½-inch fiber conduits encased in a 3-inch covering of concrete. There are from four to six ducts, as may be needed for the cables of the Kansas Gas & Electric Co. and the Fire and Police Departments. Opposite each pole there is a concrete service manhole three feet square and three feet deep, from which fiber ducts lead to the base of the poles. The wires are carried in lead-covered cables, there being separate circuits for the all-night and midnight lamps.

The cables come up through the base of the pole under the ornamental cast base of the pole and enter the steel

pole just above the sidewalk level; thence up the steel pole and out into the bracket for the lamp, the lead covered cable extending entirely to the lamp.

The arc lamps are the General Electric magnetite arc lamps connected in series, each lamp receiving 85 volts and 4 amperes. The globe of the arc lamp is 18 feet above the sidewalk. The distribution of light from these arcs is remarkably uniform and effective.

The two tungsten lamp districts are on Lawrence avenue from English street to First street. There is no car line on this street and consequently no trolley poles



WICHITA LIGHT STANDARDS.

to support the lights. The poles of these districts are cast iron, 14 feet in length, bolted to a concrete base 30 inches cube. The centre lamp is erect and in a 16-inch frosted globe, while the two side lamps are pendant and



LAWRENCE AVENUE, WICHITA, KANSAS, SHOWING LIGHTS ON SPECIAL STANDARDS.

in 12-inch frosted globes. The poles are from 85 to 100 feet apart, the lamps being 100 watt, 110 volt connected in series.

The designs for the poles were furnished by U. G. Charles, architect of this city, and the cast parts and poles were made by the Western Iron & Foundry Company of this city.

The total cost of the special illumination districts was as follows:

Steel poles, furnished by the street railway company	.....	\$5,880.00
Cast parts and cast poles, paid for by property owners	.....	10,386.44
Conduits, wiring and erection of steel poles, furnished by the Kansas Gas & Electric Co.	.....	82,822.00
Lamps, globes, etc., furnished by the Kansas Gas & Electric Co.	.....	5,900.00
Current and maintenance paid by city at large, special assessment:		
All night arc lamps, per annum, each	.....	60.00
Midnight arc lamps, per annum, each	.....	35.00
All night tungsten lamps, per annum, each	.....	20.00
Midnight tungsten lamps, per annum, each	.....	10.60

While the tungsten poles and lights are more ornamental by day as well as by night, the arc lamps give much better light and better distribution at practically the same cost of maintenance.

## PROPORTIONING CONCRETE AGGREGATE

Diagrams for Obtaining Proportions of Cement, Sand and Crushed Rock or Gravel to Make a Maximum Density Concrete.

By F. C. SNOW.\*

Diagram No. 1 is for determining the percentages by weight of different sized sand, crushed rock or gravel, so that an aggregate mixed according to these percentages will have the smallest per cent of voids possible or, in other words, be of maximum density. These curves are based on the ellipse-tangent theory as explained by Taylor and Thompson.

The percentages of the various sized materials depend on the maximum size of crushed rock or gravel used and the mesh of the screens that represent the limiting sizes of the various parts of the aggregate.

The method of using this diagram is as follows:

First, when sand and only one class of gravel or broken stone are to be used.

Example:

Material.

Size.

Sand Passes  $\frac{1}{4}$ -inch and remains on 0.

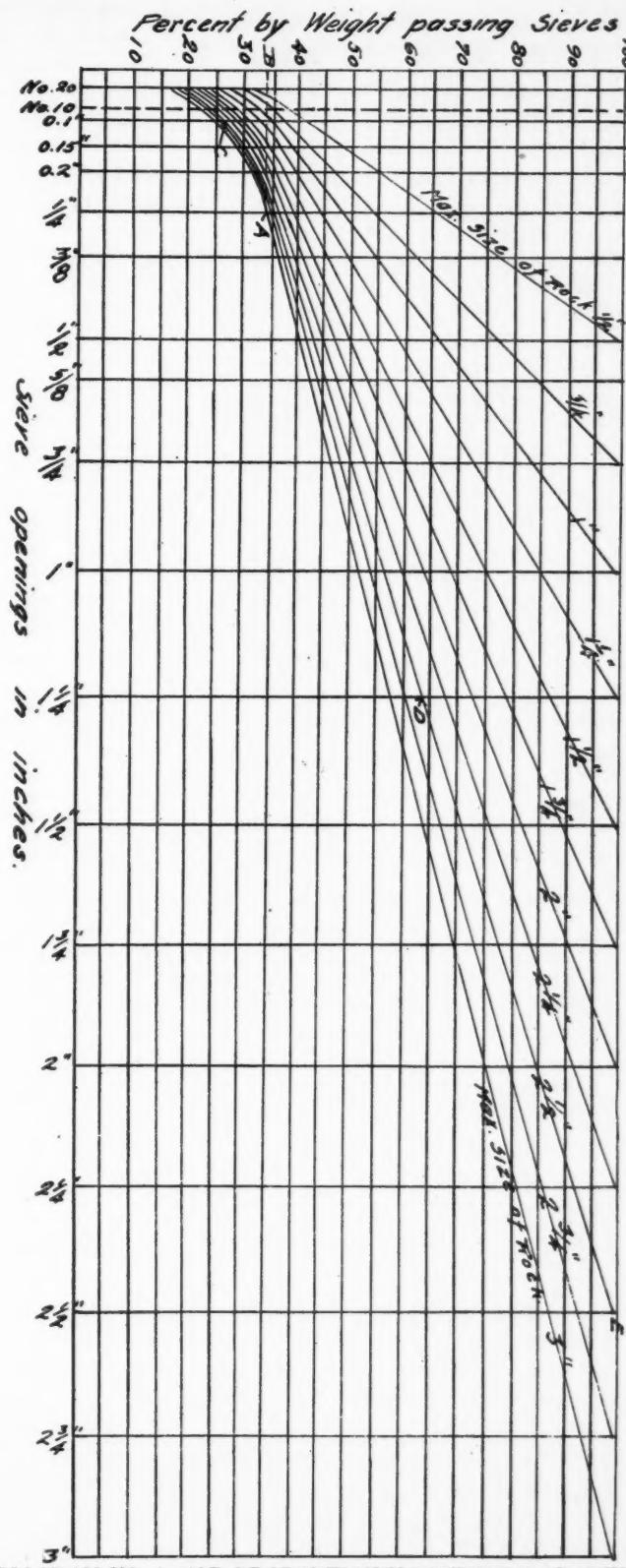
Gravel Passes 3-inch and remains on  $\frac{1}{4}$ -inch.

Find where the "sieve opening," which is the division line between the maximum size of sand and the minimum size of gravel, intersects the proper "maximum size of rock" line. For the example given the  $\frac{1}{4}$ -inch sieve opening line intersects the 3-inch maximum size of rock line at A, Diagram No. 1. A horizontal line through the point A to B will give the per cent by weight of sand required—34 per cent in this case. 100 per cent minus 34 per cent equals 66 per cent, which is the per cent by weight of gravel required.

A denser aggregate can be obtained by using more than two sizes of material, and, as a general rule, the more sizes of materials used the less the per cent of voids in the aggregate. For this reason the following example is given.

Second, when sand and a medium and coarse gravel are used.

\*Asst. Prof. of C. E., Montana State College, Bozeman, Mont.



imum rock equals 2½-inch" curve at D gives 64 per cent of sand and medium gravel. 64 per cent minus 27 per cent equals 37 per cent. This is the per cent of medium sized gravel required. 100 per cent minus 64 per cent equals 36 per cent, the percentage of coarse gravel required.

Crushed rock can, of course, be used instead of gravel, the method of using the diagram being the same in either case.

Percentages by weight of more than three sizes of materials may be determined in the same manner. Using materials sifted from "run of the bank" gravel, voids as low as 14 per cent have been obtained by the author by the above method.

After the proper per cents of the various sized materials have been found, a mixture or aggregate is made according to these percentages and the weight of a cubic foot of it is found by first compacting as much of the mixture as possible into a box that holds exactly one cubic foot, and then weighing this box full of aggregate, after which the weight of the box is subtracted, leaving the weight of a cubic foot of aggregate.

The specific gravity of the material in the aggregate is found by experiment or assumed from the table which follows, and with the weight per cubic foot and the specific gravity known the per cent of voids in the aggregate can be found from Diagram No. 2. A straight line on this diagram passes through the specific gravity, the weight per cubic foot and the per cent of voids, as shown by the line ABC. At A the weight per cubic foot of the material is shown to be 130 pounds;

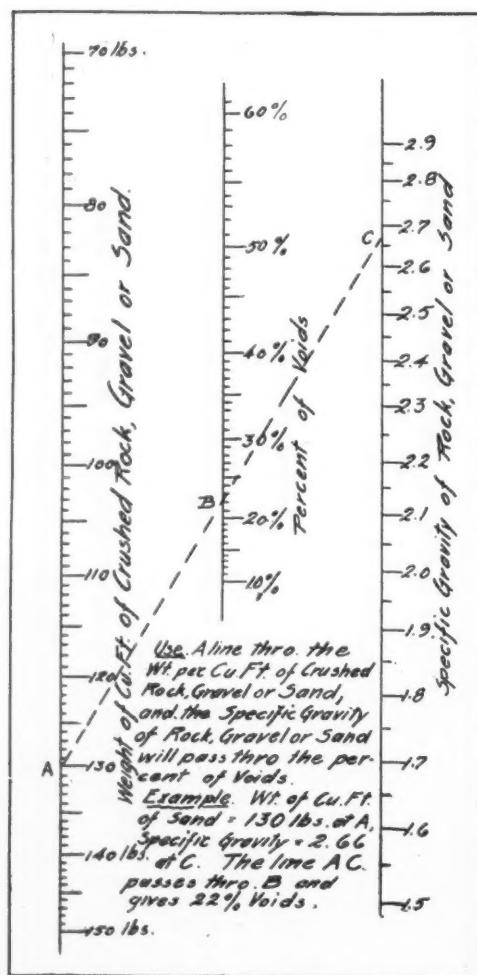


DIAGRAM NO. 2. FOR PERCENT OF VOIDS IN CRUSHED ROCK, GRAVEL OR SAND.

at C the specific gravity is 2.66, and at B the per cent of voids is found to be 22.

TABLE OF SPECIFIC GRAVITIES.

Material.	Specific Gravity.
Sand	2.65
Gravel	2.65
Granite	2.7
Limestone	2.6
Trap	2.9
Slate	2.7
Sandstone	2.4
Cinders	1.5

The per cent of cement to use is found by the following formula, which allows 2 per cent excess of cement over enough to fill the voids in the aggregate.

(Per cent of voids plus 2 per cent) x (Weight of a [cubic foot of cement])

Weight of a cubic foot of aggregate

or, if a cubic foot of cement weighs 96 pounds, the per cent by weight of cement to use equals

96 (per cent of voids in aggregate plus 2 per cent)

Weights per cubic foot of aggregate

The proof of this formula is apparent.

Example: Weight per cubic foot of aggregate, 130 pounds; per cent of voids in aggregate, 22; per cent of

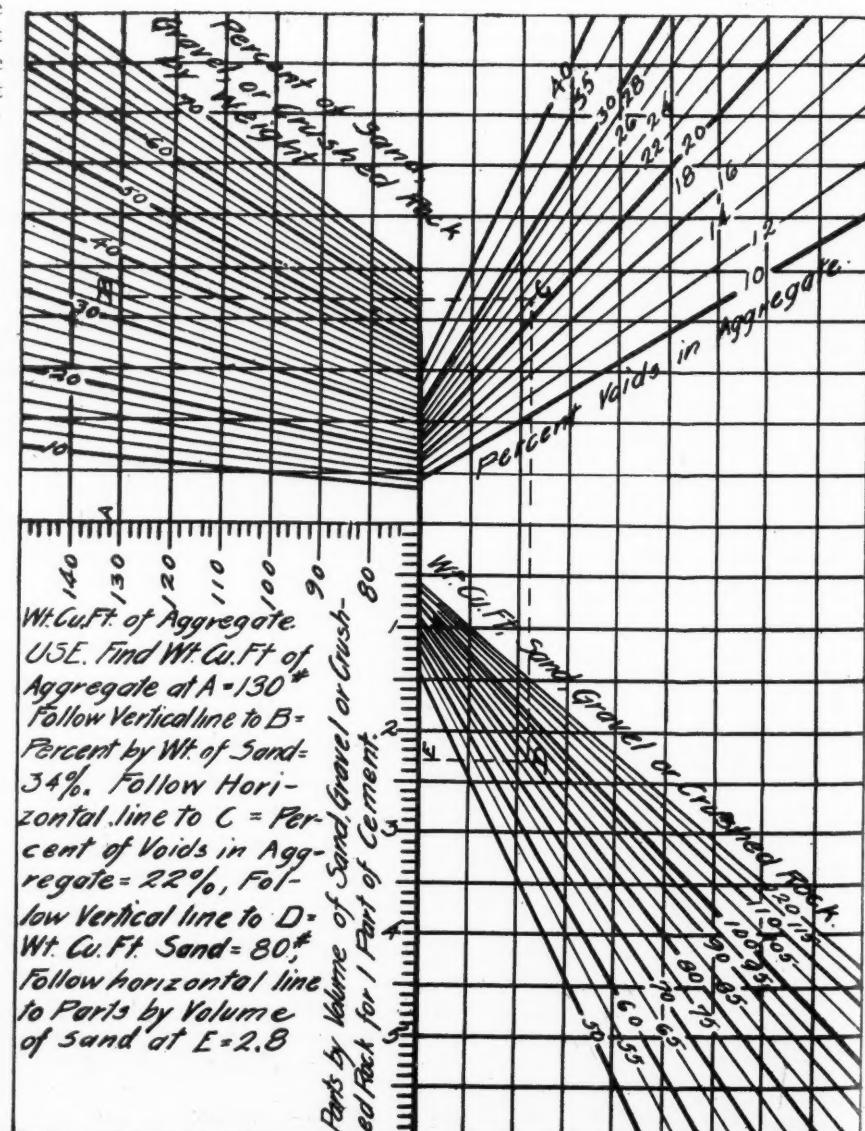


DIAGRAM NO. 3. FOR OBTAINING PROPORTIONS BY VOLUME FOR CONCRETE.

cement required equals  $\frac{96(22+2)}{130}$ , equals 18 per cent.

If the aggregate in the two-size material problem given above weighed 130 pounds per cubic foot and had a specific gravity of 2.66, then the proper mixture by weight would be: 18 per cent cement, 34 per cent sand (0 to  $\frac{1}{4}$ -inch), 66 per cent gravel ( $\frac{1}{4}$ -inch to 3-inch), or 1 cement : 1.9 sand : 3.7 gravel.

It is usually the practice, however, to proportion by volume and for the purpose of determining the proportions by volume Diagram No. 3 has been prepared.

It is necessary to obtain the weight per cubic foot of each class of material that goes into the aggregate in order to use this diagram, and this can be done by using the cubic foot box as explained above.

The use of Diagram No. 3 is as follows:

Find the weight of a cubic foot of the aggregate as at A (130 pounds). Follow a vertical line through this point to B, the per cent by weight of sand as determined from Diagram No. 1 (34 per cent). Follow a horizontal line from B to C, the per cent of voids in the aggregate as found from Diagram No. 2 (22 per cent). Follow a vertical line down to weight per cubic foot of sand, as at D (80 pounds). Follow a horizontal line through D to E, where the parts by volume for one part of cement are obtained (2.6).

The parts by volume of gravel are found in exactly the same manner, the proper percentage by weight and weight per cubic foot being used.

Example:

Material.	Size.	Wt. per cu. ft.	Percent. by Wt.
Sand	0 to $\frac{1}{2}$ "	103	39
Medium crushed rock	$\frac{1}{2}$ " to $\frac{3}{8}$ "	100	15
Course crushed rock	$\frac{3}{8}$ " to 1"	92	46
Aggregate		139	100

Specific gravity of aggregate, 2.65; per cent of voids in aggregate from Diagram No. 2, 16. Proportions by volume from Diagram No. 3: Cement, 1; sand, 2.9; medium rock, 1.1; coarse rock, 3.8.

The formula on which Diagram No. 3 is based is:

1

equals volume of weight per cubic foot of aggregate; (volume of aggregate) x (per cent of voids in aggregate plus 2 per cent) equals volume of cement; or

(1) Volume of cement equals per cent of voids in aggregate plus 2 per cent weight per cubic foot of aggregate.

(2) Volume of sand equals (per cent of sand by weight) weight per cubic foot of sand.

(3) Volume of crushed stone equals (per cent of crushed stone) weight per cubic foot of crushed stone.

Dividing (1), (2) and (3) by 1:  
Volume of cement equals 1.

Volume of sand equals (per cent sand by weight) (weight per cubic foot of aggregate)  
(per cent voids in aggregate plus 2) (weight per cubic foot of sand)

Volume of crushed stone equals (per cent stone by weight) (weight per cubic foot of aggregate)  
(per cent voids in aggregate plus 2 per cent) (weight per cubic foot of stone)

These two equations are similar, and Diagram No. 3 is based on either one.

#### FIRE HYDRANT SPACING IN CARTHAGE.

Municipal Journal,

New York City.

Gentlemen.—Will you kindly make a correction of a statement referring to the village of Carthage, N. Y., in the article on Spacing of Fire Hydrants, published in your issue of April 9? You say that we have one hydrant for every 2,382 feet of main, which is not correct. We have in the village proper 46,438 feet of mains and 83 hydrants, which will average 558 feet apart. Many of those in the business section are much closer. We have, however, 15% miles of conduit lines on which there are no hydrants, and that is probably where the mistake was made.

We bring our water from the town of Croghan, where we own 2,000 acres of land around the headwaters of Indian river. There is not a building of any kind on our watershed, as we own all the land on both sides of the river. We are reforesting by planting Scotch pine trees, putting in 10,000 a year. Incidentally, we have the best water between Portland, Ore., and Portland, Me.

Respectfully yours,

FRED M. WING, Superintendent.

The figures used in the article to which Mr. Wing refers were taken from the information obtained by us last year and published in Municipal Journal about ten months ago. On the statement returned by Mr. Wing at that time, we find Carthage credited with 82 hydrants and 37 miles of "street mains now in service." It was our intention by using the term "street mains" to exclude mains which were not laid in city or town limits, and we considered that in all cases figures given for this item included only mains laid within such limits. We are glad to publish the above correction, which would remove Carthage from first place on the list.

Since writing the above the following letter from Colorado Springs has been received. The same explanation applies to these figures also.

Municipal Journal,  
New York City.

Gentlemen.—In your issue of April 9th, "Fire Hydrant Spacing," I note that you give Colorado Springs, Colo., a spacing of 1,496 feet. I do not believe that this is quite fair to us, as we have 33.2 miles of pipe that is strictly flow line to bring water from the mountains; so I think that we should have this amount of credit, making our spacing 1,149 feet instead of 1,496 feet.

Yours truly,

B. B. McREYNOLDS,  
Water Superintendent.

#### GRANITE BLOCK PAVEMENTS.

April 17, 1914.

Editor Municipal Journal,  
50 Union Square, New York.

Dear Sir.—Referring to the letter in the current issue of the Municipal Journal from the Hildreth Granite Company in the matter of granite block pavements, I note that they assert that there was inaccuracy in the statement "as to the names of the concerns who are in a position to furnish granite pavement to the city of New York and the surrounding cities." As the article to which the company refers was based on a quotation from the annual report of the Bureau of Highways of Manhattan for the year 1912, I would like to call your attention to the fact that there was no such statement furnished in that report.

There was given on page 46 a table under the following description: "The following table contains the names and locations of the principal quarries available at present for New York paving blocks and indicates approximately the present capacity of each." This table was based on an estimated capacity of the quarries referred to furnishing blocks in accordance with Manhattan specifications, and no account was taken of the needs of other boroughs or of other cities in this vicinity.

This bureau has had no dealings directly with the Hildreth Granite Company. As it understands that the output of the New England Granite Corporation, which was estimated in the 1912 report at 6,000,000 blocks, is marketed to Manhattan paving contractors by the Hildreth Granite Company, which claims for the year 1913 that two-thirds of 14,000,000 blocks, or, say, 9,000,000, were furnished for the city of New York itself and others nearby, it would seem that the estimate made for the previous year was not considerably in error.

Very truly,  
H. W. DURHAM, Chief Engineer.

#### TRENCHING IN INDIANAPOLIS.

The Indianapolis Water Company of Indianapolis, Ind., is engaged in constructing a new pumping station, located on Fall creek, about four miles northeast of the centre of the city, the object of this station being to serve the northern and eastern sections of the city, which is about 100 feet higher than the main part of the city. In connection with this work the company will lay a 24-inch transmission line, which will be approximately 21,000 feet in length.

In carrying on the pipe work referred to, the company expects to do the trench excavation by means of a Buckeye traction ditcher, to use a power derrick for handling pipe and lowering it into the trench, a compressed air outfit and pneumatic hammers for calking the pipe and a power machine for backfilling. Motor trucks will be used for hauling; and, in fact, it is the intention to use power in place of labor or horses wherever possible. The use of these contrivances both increases the speed with which the work can be carried on, and decreases the cost, besides rendering the company more independent of labor troubles.

The ditcher referred to was bought about two years ago, and since then has been used for digging approximately 20 miles of trench, varying in depth from 4½ to 6 feet, for laying 6-inch to 24-inch pipe in streets where the roadway has not been permanently improved. When the machine was first bought it was stipulated that the Buckeye Traction Ditcher Company should furnish an operator for ten days and guarantee to lay at least 20,000 feet of pipe in that time. The test was made on an extension from Indianapolis to a suburb lying about eight miles north, and 20,000 feet was completed in less than nine days, working from seven to eight hours a day. During 1913 the water company laid an extension to another suburb about five miles southwest of the city,



COMPLETED TRENCH, DITCHER IN BACKGROUND.

laying a 12-inch pipe with about 4½ feet cover, in which work the ditcher made a speed of from 1,800 to 2,700 feet per day of ten hours.

#### SEATTLE'S HARBOR IMPROVEMENTS

##### Total Cost to Exceed Six Million Dollars—Large Amount Yet To Be Contracted For, Chiefly Warehouses and Pier Sheds.

By CLAUDE A. OSIER\*.

The Port of Seattle Commission was created by vote of the people of King County, Washington, Sept. 5th, 1911. This commission was created for the purpose of outlining a definite program of harbor development and preparing plans and supervising the work of carrying out such development. The funds for construction purposes are being supplied by the sale of bonds of which a total issue of \$6,100,000 have been authorized.

Shortly after the creation of the commission, steps were taken for the organization and the year 1912 was employed in the preparation of the preliminary plans and the development of a comprehensive scheme upon which estimates could be prepared for the submission of bond issues for vote by the people of the district. Before the end of the year 1912, affairs were in such condition that bids were being called for the construction of the first unit of the system and in February, 1913, the first actual construction work was started.

At the present time, the Port Commission has started work on six projects or improvements, which will mean a total expenditure of over six million dollars. These improvements may be briefly described as follows:

Smith's Cove Project.—The general purpose of this improvement is to provide a trans-shipping terminal for the handling of commodities such as lumber, steel, building materials, etc., although it is proposed to make provision for general merchandise as well. The plans call for a total pier 310 ft. wide by 2,580 ft. long. On the outer end of this pier will be constructed two merchandise sheds, each 680 ft. long by 100 ft., with trackage facilities in both front and rear. To the north of these sheds will be located a dry lumber shed and open storage wharf for the handling of heavy commodities already referred to. The pier will be equipped with gantry crane, locomotive crane, monorail carrier system and probably other mechanical equipment. Tracks for the dredging and superstructure are completed, and about \$300,000 worth of work had been done up to the 1st of April, 1914. The total cost of this project will be one million dollars.

East Waterway Project.—This project is located on the East Waterway, which is in the southern portion of the city, at what might be called the center of the wholesale and manufacturing district. It is planned to serve the largest sea-going vessels and will be well-equipped for transshipment operations. A slip 210 ft. in width and 750 ft. long has been excavated by suction dredge; the excavated material, which amounted to about one-half million yards, being used for filling some tide land flats about half a mile distant. On each side of the slip has been constructed merchandise sheds 90 ft. wide by 750 ft. long. All of this work has been completed and the sheds were put in operation the first of the year 1914.

Plans are now being prepared and bids will soon be called for the construction of two concrete warehouses located just back of the two sheds referred to above; each warehouse to cover ground area 250 ft. by 90 ft., and will be three stories high.

Salmon Bay Project.—The general purpose of this

\*From data supplied by Paul Whitham, Port of Seattle Engineer.

project is to provide dockage facilities for sea-going vessels and headquarters for the fishing fleet. At the present time, the port has completed the construction of the fishing boat terminal, providing dockage facilities for about 200 fishing boats with the latest equipment for storage of nets, etc.

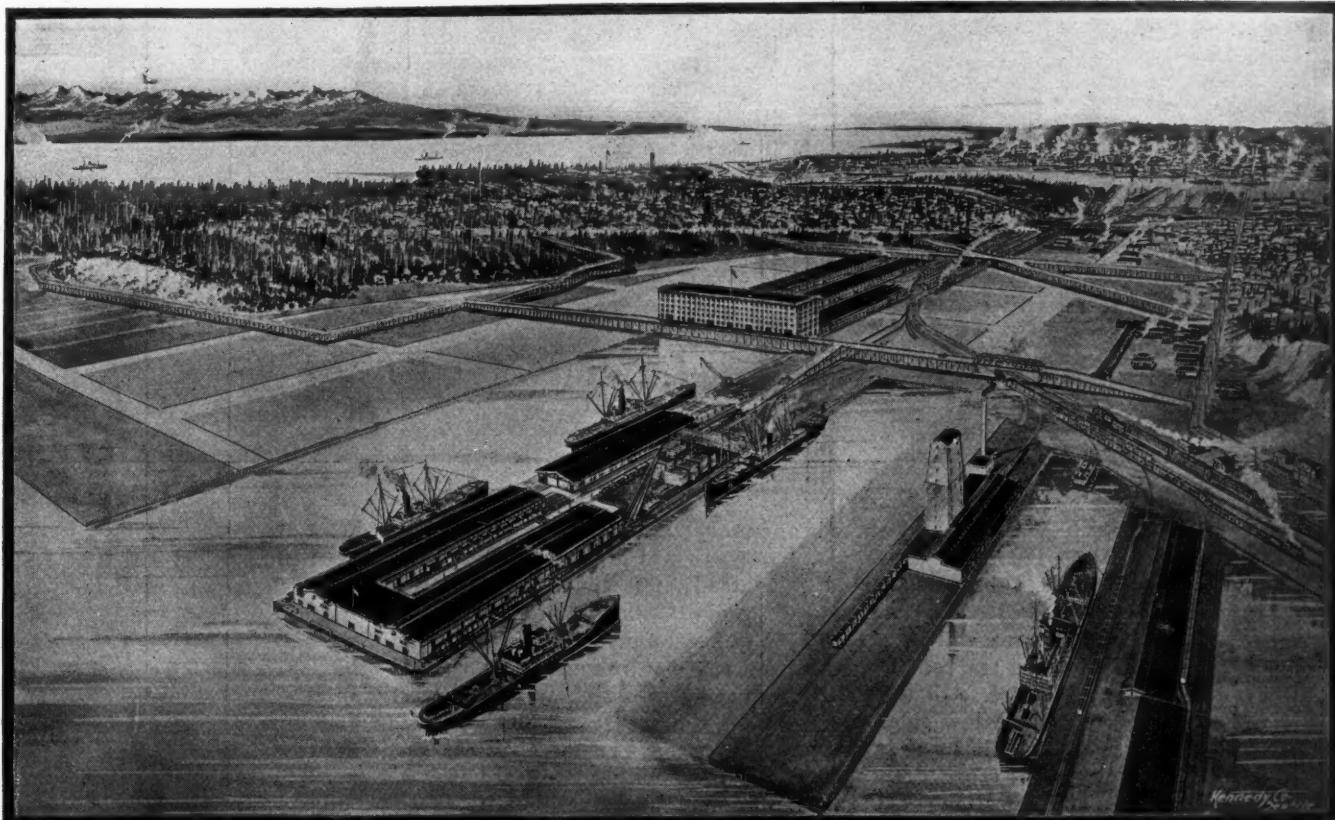
This project is located on a bay connecting with Puget sound and at present is a salt water harbor. With the completion of the Lake Washington canal, now being constructed by the United States government, this will become a fresh water harbor to which access will

be had through the large lock now almost completed.

Central Waterfront Project.—The general scheme of this project provides for a centrally filled area upon which is being constructed a five-story concrete building 140 ft. by 400 ft., one-half of which will be for cold storage and the other half for general storage. Around this central area there have been constructed two general merchandise sheds for the accommodation of local and coastwise trade, although the wharf is long enough and the water deep enough to accommodate an 800 ft. boat drawing 40 ft. of water. On the northerly side of



BIRD'S EYE VIEW OF PROPOSED SOUTH TERMINALS OF PORT OF SEATTLE.



BIRD'S EYE VIEW OF PROPOSED NORTH TERMINALS OF PORT OF SEATTLE.

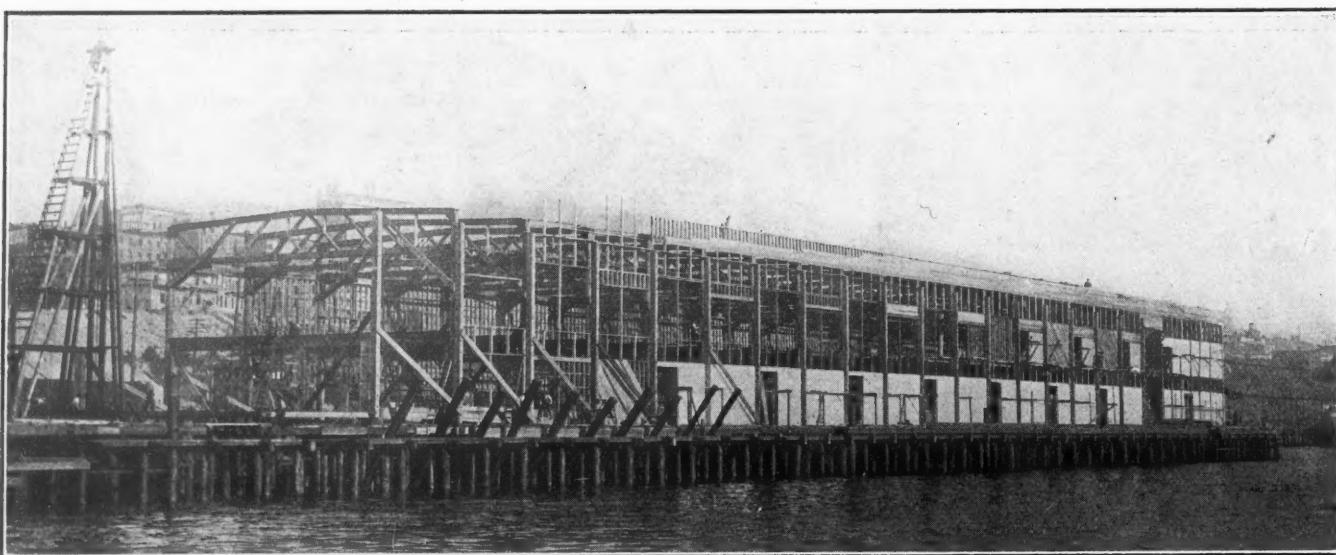
the improvement, a protected basin is being constructed which will provide floats with about 1,200 ft. frontage for the accommodation of market boats, fishing boats and other small vessels. This improvement is in the heart of the retail and public market districts and is adjacent to the rights of way of practically all the railroad lines entering the city.

*East Waterway Terminal.*—This improvement is the largest one that the Port has under way. It calls for the expenditure of three million dollars and proposes to provide one of the largest terminals on the western coast of the United States. The plan embraces the construction of 5,900 lin. ft. of dock frontage, along the

decided to use the creosoted pile foundation. All the waters of the Seattle harbor are infested with teredo to such an extent that an untreated pile lasts only about one year to 18 months, but a creosoted pile has a life of from 15 to 25 years. The creosoted foundation scheme was found to be considerably cheaper than concrete and consideration was taken of the experience that the requirements for dockage facilities change so rapidly with the improvement in the method of construction and operation of the ships themselves that it is sometimes a mistake to attempt to build for all time to come. The general plan adopted by the commission is to make all warehouse construction back of the merchandise



EAST WATERWAY SLIP; PORT OF SEATTLE.



CENTRAL WATER FRONT; PORT OF SEATTLE.

entire length of which will be constructed one-story merchandise sheds 90 to 100 ft. in width.

Back of these sheds will be constructed reinforced concrete warehouses, cold storage warehouses, grain elevators, etc. The entire area will be served by a comprehensive system of railroad tracks. The waterway will be dredged to a depth of not less than 40 ft. at ordinary low tides or 37 ft. at extreme low tide.

*General Construction.*—On all of the foregoing projects, it has been planned to use creosoted piling for wharf foundations. The question of the use of concrete foundations for wharves was gone into very thoroughly early in the life of the commission and it was

sheds of reinforced concrete, and all wharf construction of creosoted piling and treated lumber. Up to the present time, the construction has been confined to the wharf work and channel excavation, so that no very unusual engineering features have been met with. The warehouse construction that is about to be started promises to furnish a very interesting problem both from the standpoint of design and construction.

The merchandise sheds are all of timber construction with corrugated iron siding. All of these sheds are being supplied with the most up to date automatic sprinkler system for fire protection and with the latest devices for the handling of general merchandise.

# Municipal Journal

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Contributions suitable for this paper either in the form of special articles or of letters discussing municipal matters, are invited and paid for.

Subscribers desiring information concerning municipal matters are requested to call upon MUNICIPAL JOURNAL, which has unusual facilities for furnishing the same, and will do so gladly and without cost.

APRIL 23, 1914.

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#### Municipal Engineers and Experts.

"There is no field of municipal work where the engineer has the opportunity to develop greater versatility than in the moderate sized city, corresponding, say, with cities of the second class in New York State. Here the city engineer, appointed by the mayor, is a voting member both of the board of estimate and apportionment and of the board of contract and supply. He is called upon to exercise control over almost every kind of public work incidental to the modern city. The work may not be of the magnitude to be found in the greater cities, but its variety is far greater than that which comes to the engineer of cities of the first class, where jurisdiction and responsibility are subdivided. Having less of a certain kind of work to do, he takes it very seriously and it is often exceptionally well done.

"The practice of electing a city engineer by the council or other legislative body, or, as is done in some cases, by popular vote, cannot be too strongly condemned. Past experience has given good ground for the general statement that no man should be selected to do professional or highly technical work by election, whether that election be by the general public or by a legislative body. Those who are called upon to vote for candidates for such an office have no means of knowing their peculiar qualifications, or lack of qualifications, and better results will almost invariably be obtained if responsibility for the

appointment of a man to do such work is vested in the chief executive of the city."

The above is part of an address delivered by Nelson P. Lewis, chief engineer of the Board of Estimate and Apportionment of New York City, before the graduate students in highway engineering at Columbia University; and there are two points in this brief quotation which seem to us to deserve special recognition—the reasons advanced for appointing rather than electing a city engineer; and the great variety of the work which he must undertake and the fact that this is "often exceptionally well done."

With the latter point we are frequently impressed as we come into contact with engineers of the smaller cities. The duties of the city engineer of a large city are often more executive than technical, and both he and his subordinates are too overwhelmed with details to give adequate study to the problems presented; and so for year after year they follow standard methods, use standard plans and specifications, and depart from the old standard of practice only after most of the more progressive moderate sized cities have led the way.

The city engineer of a medium sized city has, in fact, unusual opportunities for obtaining wide engineering experience, since he is called upon in many cases to act as designing and constructing engineer in connection not only with sewers, water works and street pavements, but also bridges, street railway tracks, buildings, river improvements, retaining walls, and almost every kind of structure which is included under the head of engineering.

That he should be an expert in all of these branches is impossible; that he should be even reasonably competent in all of them is hardly to be expected, when we consider that, for the salaries ordinarily paid to city engineers, young and comparatively inexperienced engineers only can be obtained. City councils should realize this, and city engineers should not be ashamed to confess it, since it is certainly in no way to their discredit, and to seek expert advice on important or novel work.

Probably in no one feature are American cities so far behind the most successful European ones as in the proper utilizing of expert services—expert mayors as well as expert engineers; and city engineers should not only consider it as no reflection upon their ability, but should even recognize it as a duty to their city and to their profession, to insist that when they are called upon to undertake any important work, the city should employ an expert in that particular line to advise them. None but a large city could, of course, expect to retain on its payroll experts in various lines or even in one line; and an expert in one line would probably be less effective in carrying on the general routine work of a city engineer than the average man that fills that position.

The city engineer's duties are most diverse and important, and when well carried out deserve as much credit and may require as much talent as those of the best paid consulting expert. But part of his ability is the recognition of the times (which will come in the history of most of them) when the best interests of the city as well as his own reputation call for the advice of an expert in the particular subject involved, and he should not hesitate to urge that such advice be obtained. On the other hand, the city should not expect the engineer to pay for this advice, but should do so themselves; since they should realize that the salary which they are paying is not sufficient to engage for them expert knowledge in a dozen different branches, or probably even in one, but that the engineer, although not a specialized expert, is probably giving them more than their money's worth in carrying out the ordinary work entrusted to his charge,

# The WEEK'S NEWS

"Good Roads" Day Successful in Illinois—Hoboken (N. J.) to Have New Sewer System—Binghamton (N. Y.) Will Improve Water Supply—Philadelphia Loses Suit Against Lighting Company—Commissioner Woods Plans Police Changes in New York—Washington May Buy Street Railway—Moving Pictures of Pottsville (Pa.) for Publicity Campaign.

## ROADS AND PAVEMENTS

### New York Preparing to Make Paving Brick.

Albany, New York.—Bricks for use in constructing highways in New York State will be made at the Elmira State Reformatory as soon as buildings and apparatus are erected. Governor Glynn has signed the Murtagh bill, appropriating \$75,000 for this purpose. The plan is the first step in the Governor's recommendation to the Legislature that convicts be employed in manufacturing road material. J. N. Carlisle, State Commissioner of Highways, said that samples of Chemung shale, deposits of which abound at Elmira, had been shipped to various brick-making concerns for tests of its adaptability. The tests have not been completed. Mr. Carlisle expressed the opinion that the first state brick-making plant would be in operation and brick roads completed before the summer is over.

### National Road Being Reconstructed in Ohio.

Columbus, Ohio.—Definite action in rebuilding the old national road through Ohio has started, when the state highway department let a contract for constructing 24 miles in Licking and Muskingum counties to the H. E. Culbertson Company of Cleveland. The company's bids aggregate \$430,017 on the separate jobs in the two counties, and were the lowest of several competitive bids. The roadway will be made of concrete, 16 feet wide, and will be the first extensive stretch of concrete road in the state. It will cost an average of \$16,000 a mile without bridges, or \$18,000 with bridges. The United States government will contribute \$120,000 for the construction of the road in two counties. The state will spend \$80,000 and the counties will pay the balance of the cost, about \$236,000. Work will be started immediately, and probably will be finished by early fall, state officials say.

### To Experiment With Concrete Pavements.

Atchison, Kan.—As an experiment Atchison county will try out a mile of concrete pavement on county roads. The Monrovia road will be paved for one mile west of the city. Bids have already been advertised for by the county commissioner. The county engineer has looked into the cost of the paving and found it will be but 40 per cent. more expensive than macadam. Figuring the upkeep of the latter method of paving the commissioners have decided that in the long run concrete will be cheaper, as it is more permanent than macadam. Other counties in the state are watching the proposed experiment with interest, as it will be the first paving of country roads in the state.

### Highway Superintendents Will Organize.

Richmond, Ind.—To organize the eight highway superintendents of the Sixth District will be the object of W. O. Jones, Wayne County Highway Commissioner, who hopes by direct organization to effect a state association which will be able to frame amendments to the new road laws before the next session of the Legislature. Mr. Jones will communicate with the superintendents of Hancock, Henry, Fayette, Union, Franklin, Rush and Shelby counties at once relative to a meeting in Richmond, probably the second Saturday in May. Other objects of the meeting will be to exchange ideas on road work, plan out new methods and discuss Indiana's road situation and road laws.

### Progressing in Construction of Sheridan Road.

Chicago, Ill.—The ninety-mile memorial highway, known as Sheridan Road, which will link Chicago with Milwaukee, is almost completed as far as Wisconsin is concerned. The entire stretch is to be built of concrete and it is planned

to maintain it as a boulevard running through parkways. It is now up to the State of Illinois to do its share of the highway construction. Already the legislature has passed a bill to permit each municipality affected by the road, with the consent of abutting property owners, to turn the highway over to the control of the Lincoln park commissioners. The local officials would, of course, be obliged to pay for construction and maintenance, but the park commissioners would take care of administration and upkeep. Several towns have taken advantage of this offer and others will soon fall in line, so that the great Sheridan Road bids fair to be completed this year.

### Illinois Buys 400,000 Barrels Cement for Roads.

Springfield, Ill.—At a recent session of the Illinois State Highway Commission held at the Capitol, the first great step of the State Aid Road Movement was taken. The contract for all the Portland cement to be used in these roads in all of the counties of the state was awarded to the Marquette Cement Manufacturing Company of Chicago. Four hundred thousand barrels of Marquette Portland cement were purchased; this material will be used in the construction of hard roads throughout the state. It is the purpose of the State Highway Commission, composed of A. D. Gash, J. P. Wilson, S. E. Bradt and Engineer A. N. Johnson, to connect every village, town and city of this state with the best concrete and brick roads that can be constructed.

### Extensive Brick Purchase in Florida.

Birmingham, Ala.—In the extensive roadway construction that is being done over the entire state of Florida, local contractors have shared well, as indicated by the announcement that 6,000,000 brick had been sold to two counties in the state by the Copeland-Inglis Shale Brick company of this city. Upon his return from Florida B. A. Inglis, of the company, said 1,000,000 brick had been sold at Tampa, while 5,000,000 had been sold at Orlando. The brick made in this city will be used on county highways of the two counties named. It is stated that plans have been made for the construction of a brick highway from Jacksonville to Tampa, 212 miles. Twenty miles of the roadway have already been constructed, while it was said that county after county was contracting for work on the brick highway, and that the road would be completed in less than three years.

### Chicago's Asphalt Repair Plant in Operation.

Chicago, Ill.—Chicago's asphalt repair plant has been officially opened. The city plans the systematic repair of approximately 1,000 miles of city streets, involving an expenditure of \$800,000 of the vehicle tax fund. Work will be under the direction of L. E. McGann, Commissioner of Public Works, and Supt. W. E. Leininger. With the opening of the plant, street repair work will be started this year full two months before the usual time. Within two weeks it is planned to have forty gangs and thirteen steam roller crews building roads within the city limits.

### Road Bonds Elections in Texas.

Fort Worth, Tex.—The report has been completed, showing the amount of road bonds voted in this state during March, 1914. According to this statement, \$563,000 in highway bonds were issued in six counties, against \$885,000 defeated. Five counties voted against the issuance of road bonds last month. There were also three elections recalled in March, amounting to \$300,000.

### Buy Three Motor Trucks to Spread Hot Tar.

Cleveland, O.—The White Company announced the sale of three five-ton trucks to the Good Roads Company, con-

tractors, of Baltimore, Md. These trucks will be built with power transmission tank bodies for sprinkling and spreading hot tar and other road binding materials. The tank bodies will be built with a steam generator and a series of interior steam pipes for maintaining the tar in the proper state of fluidity and the power transmission will operate an air compressor to force the fluid through the passages to the spreading outlet.

#### Good Roads Day Notes.

Mason, Tex.—Wednesday, May 6, has been designated as good roads day for Mason County. On this day all of the business houses will be closed and everybody will be given a chance to work on the roads. The object is to arouse more enthusiasm for good roads in the county and to do as much work as possible on that day.

Sterling, Ill.—Good Roads Day was generally observed in Illinois on April 15 and Gov. Dunne took active part. In Sterling a large number of miles of road have been improved.

### SEWERAGE AND SANITATION

#### Accident to Sewage Pumping Station.

Brooklyn, N. Y.—The Avenue V sewage pumping station, which has been under construction for some months past, and the completion of which is already about seven month behindhand, recently met with an accident which will further delay the finishing of the contract. The foundation is carried for a considerable distance below water level, and to prevent the forcing up of the floor by water pressure this was designed to be 6 feet thick, the weight of this being calculated to be sufficient to counterbalance the hydrostatic pressure. In order to waterproof this it was arranged that one foot of floor should be laid first and waterproofed, and then covered with the remaining five feet of concrete. The one foot was completed by the contractor, and he was particularly cautioned by the engineers to keep the pumps going continuously to prevent the pressure on the under side of this one foot from forcing up the floor. The waterproofing had been applied and about one-twentieth of the area of the top 5 feet had been placed. Meantime about a week ago the contractor discontinued pumping, and two days later part of the one-foot thickness of floor was cracked open by the pressure below. This permitted water to enter the well, counterbalanced the pressure, and thus prevented the entire floor from being lifted. Plans have not yet been formulated for repairing the damage and completing the work.

#### Suburb Will Connect Sewer System With Houston's.

Houston, Tex.—The Heights, Houston's largest suburb, will have a sewer system which will be connected with the city's system. While the contract has not been signed all the important features of it have been agreed upon, and it is the expectation that it will be signed within the next few days. The arrangement obviates the necessity of Houston Heights providing for a sewage disposal plant. The sewage will be run through a main which will connect with the Houston main at the foot of Highland street. It will be taken off through the Willow street pumping plant and from there will be pumped to the city's filtering plant. Engineer Howe, of the firm of Howe & Wise, has been retained as engineer to make the plans and specifications and superintend the work of installing the system. The city officials and the members of the citizens' committee will keep in close touch with the engineer and the contractor, and all are sanguine of securing the best possible results from the expenditure of the \$200,000 bond issue money. The engineer states that it will take 12 months to complete the work after beginning active operations.

#### Plan New Sewer System for Hoboken, N. J.

Hoboken, N. J.—Of the seven plans submitted for a new sewer system in Hoboken, the following plan has been strongly recommended: A system of combined sewers to receive both the sewage and storm water of the unsewered part of the city. The rebuilding of several of the existing sewers. The reduction of the area tributary to certain of the existing sewers by diverting some of the sewage there-

from to the new sewers. The extension of the outfalls for the dry weather flow of sewage to the pierhead line, 1,000 feet offshore. The provision for properly flushed sewers. The establishment of grit screens at the outfalls. The cost of the new system, the plans for which were prepared by Engineer James Fuertes, is estimated at \$676,840, with an annual cost of about \$38,150.

### WATER SUPPLY

#### Governor Glynn Vetoes Maier-Foley Water Bill.

Albany, N. Y.—Governor Glynn has vetoed the Maier-Foley bill, which would provide for the supervision of water companies by the Conservation Commission. This is the bill to which the City of New York objected on the ground that it would interfere with the use and development of the city's new water system. The Governor attached a memorandum to his veto, in part as follows:

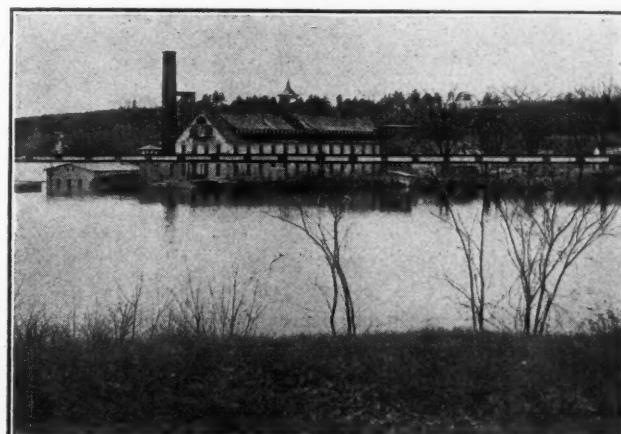
"This bill attempts to vest in the Conservation Commission as to water works corporations and to some extent as to municipalities substantially the powers now exercised by the Public Service Commission over many other public utilities. The general purpose of the bill seems to be commendable. There is, however, a provision as follows:

No water works corporation or municipality shall hereafter supply with water or extend its distributing mains for the purpose of supplying with water territory already supplied by the existing water works system of a water works corporation or municipality until the commission shall have certified that public convenience and necessity require such supply of extension.

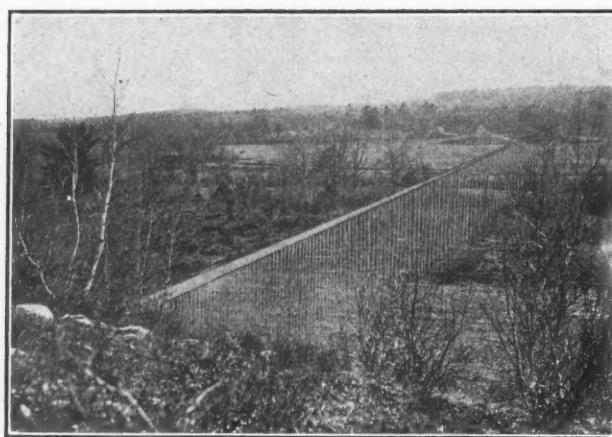
"This provision, in my judgment, is altogether too drastic. It seems to be broad enough to prevent a municipality from supplying itself with water in a territory already supplied by an existing water works company without the consent of the state board. It would preclude such a municipality from furnishing its public schools, its hospitals, its police stations and other public buildings and places with necessary water, more important still from protecting itself by its own plant from the spread of conflagrations in that portion of its territory where existing corporations have pipe lines in service.

#### Hearing Before Legislature on Providence Water Project.

Providence, R. I.—The Providence water project in Kent county is still before the State Legislature. A hearing has been held for the past week or so, in which the people of Scituate and Foster protested against the present plans to increase the water supply of Providence. To prevent the use of Scituate as a catchment area and impounding reservoir, it is advocated that water be taken from the Pawtuxet River at Pettaconsett and filtered before being led to the city. However, city officials believe that the Scituate project is more effective. If it is successful in the first of the accompanying illustrations the height to which water will cover part of Scituate is indicated by the black and white line, and the approximate location of the dam is shown by the white lines in the second illustration.



Courtesy The Providence Journal.  
SECTION OF SCITUATE IN PROPOSED WATER SYSTEM.



Courtesy The Providence Journal.  
APPROXIMATE LOCATION OF DAM.

#### Grant Petition for Municipal Water Plant.

Riverhead, New York.—The petition to establish a municipal water plant in this village has been granted by the Town Board. It was found to be in correct shape, and that enough people had signed it.

#### Greater Pumping Facilities Installed.

Dallas, Tex.—All water requirements of Oak Cliff, a suburb of Dallas, for years to come have been provided for when a 3,000,000-gallon capacity pump was put in regular operation at the new pumping station. The pump had been tested previously by J. M. Bassett, chief engineer of the water department. The pumping engine formerly was located at the Turtle Creek station, but has been completely rebuilt. The old station was equipped with one pump, capable of furnishing 1,500,000 gallons daily, and two pumps of 500,000 gallons capacity each. The use of these smaller pumps will be discontinued, and the larger one installed in the new station will furnish the regular supply, the 3,000,000 capacity pump being used as an auxiliary unit. This will give Oak Cliff available pumping facilities of 4,500,000 gallons daily. That part of the city now consumes approximately 1,000,000 gallons each day.

#### To Improve Water Service.

Binghamton, N. Y.—This city contemplates the improvement of its water service, and to accomplish that end it has detailed Nicholas Hill, a hydraulic expert, to draw up plans. A representative of the engineer is examining the general contour of the city. The several hilly sections of the city may be given adequate fire pressure either through the construction of reservoirs or increased pumping facilities. It is thought, however, that the old plumbing fixtures in many houses of Binghamton cannot stand the high pressure of larger pumping engines, so that the reservoir plan is deemed more advisable.

#### Will Enlarge Water Works.

Ozark, Ala.—The putting in last year of the new sewerage system and the increase in population have made it necessary to increase the water and light plant. An election has been held in Ozark on the issuance of \$25,000 bonds to make the new additions. The proposition carried by 158 to 28. A second well is more than half completed at the power plant already, and the new machinery will be purchased as soon as the bonds are floated.

#### Object to Buying East Jersey Plant.

Paterson, N. J.—After Mayor Fordyce and others had pointed out complications that might follow the purchase by the State Water Supply Commission of the plant of the East Jersey Water Company, representatives of several municipalities who attended a conference in the city hall on April 18th agreed that more time was needed to consider the subject. The municipalities represented were

Paterson, Passaic, Nutley and Montclair in response to a call issued by the finance board of this city. In opening the discussion, Mayor Fordyce suggested that in the very near future the present watershed operated by the East Jersey Water Company would not be sufficiently large to supply the municipalities now served. He pointed out that the disclosure of this fact alone made it evident that even though the East Jersey plant and water rights were purchased, it would only be a few years when additional property would have to be secured to furnish a greater volume of water. Commissioner A. R. Carr of Nutley raised the point that the State commission was dictating to the various cities how the water should be disposed of. He was inclined to be of the opinion that each municipality should regulate and have control over its own water system.

### STREET LIGHTING AND POWER

#### Philadelphia Loses Suit Against Gas Company.

Philadelphia, Pa.—By a decision of a jury of the United States District Court the city of Philadelphia is compelled to pay to the Welsbach Street Lighting Company the sum of \$56,363.40, which it had deducted from the amount due the concern for supplying gasoline lamp illumination during 1913. This is the full amount of claim by the lighting concern. The city authorities refused to pay the full contract price on the ground that the company did not in all cases meet the requirements of the specifications. Most of the argument of the defendants at the trial was to the effect that the tests of the candle power of the lamps were made under conditions not provided for in the specifications governing the contract. Director Cooke, of the Department of Public Works, who caused the original deductions to be made, after hearing the verdict, said that in all probability the case would be appealed to a higher court.

#### Take Over Municipal Lighting Plant.

Pittsfield, Mass.—The plant of the South Hadley Falls Electric Light company has been taken over by the town. The Amherst Power company which formerly owned the local plant vacated the premises and the town's officials took hold with no interruption in the service. Wilfred Scott has been appointed acting manager and he has announced that there will be no change for the present. Contrary to expectations there will be court proceedings before the town has full ownership of the plant. The Amherst Power company asked \$40,830 for the plant, this including the interest and damages amounting to \$1,689 for part of the plant outside of the town limits that would not be taken by the town, and is of no value to the Amherst company. The plant was valued at about \$25,000 by the special committee which investigated the question of municipal lighting for the town.

#### Work Begun on New Lighting System.

Brownwood, Tex.—Work has been begun on the installation of Brownwood's new street lighting system. The plans call for the abolishment of all arc lights and the installation of smaller units at more frequent intervals. The new lights will cost about \$15,000 and it will require two months to complete the work.

#### Company Must Pay for Storage of Unused Meter.

Elmer, N. J.—A verdict awarding Mayor Brooks \$75.45 for the storage of a gas meter which remained idle in his office three years is to be appealed to the Salem County Court by the New Jersey Gas Company. The award was made recently by a jury before Justice of the Peace Golder at Centreton. The case is unique, and it is said that the gas company will fight it through all of the courts rather than have it stand as a precedent for its thousands of other consumers. When the gas was cut off from Mayor Brooks's office, about three years ago, before he was elected Mayor, the gas company failed to follow its usual policy of removing the meter at once. The suit is one of the developments of the light war at Elmer, which resulted in the gas being turned off the streets and the town being in darkness a week before the officials agreed to accept

the terms of a new five-year contract for gas. Mayor Brooks has been a hearty advocate of a municipal electric plant.

#### Will Use Single Light Poles.

Bridgeport, Conn.—Alderman H. Stagg, chairman of the Lamps Committee of the Board of Alderman, hopes to have the installation of the city's "White Way" well under way by June 1. Mr. Stagg said the work had been held up while the committee was trying to decide which was the better style of light poles to use in Bridgeport, and had visited several cities, including Boston, Mount Vernon, New Rochelle, Holyoke, Lynn and Newark to inspect the poles used in those places. It is now practically decided that the single light poles such as are used in New Haven will be best suited to the needs of Bridgeport.

#### Municipal Electric Plant Completed.

Cedar Falls, Ia.—The new \$75,000 municipal electric light plant and distributing system has been completed here. Current is now being furnished for street lights and connections have been made with a number of factories. The new plant will gradually take over the entire electrical service from the Citizens' Gas & Electric Co., whose franchise expired some months ago.

#### Will Use Arc Lamps.

Lafayette, Ind.—Boulevard lights will not be placed on the levee. This decision has been reached by the Board of County Commissioners. In the place of boulevard lights there will be arc lights at intervals of 120 feet. They will be on the same poles that will be used by the street car company to support their trolley lines. The commissioners say that the initial cost of boulevard lights is too great for the county and that the upkeep would be a big item of expense to the county.

#### Extend Service of Municipal Plant.

Pasadena, Cal.—Pasadena has been given formal permission by the South Pasadena board of trustees to place conduits and pole lines in that city for the purpose of furnishing energy from the Pasadena municipal electric plant to the citizens of South Pasadena. Principally, the desire of General Manager Koliner is to furnish service to residents on the borderland between the two cities, but as time advances the demand may necessitate the extension of the service further into South Pasadena.

#### Appeals from Free Light Ordinance.

Trenton, N. J.—The Public Service Electric Company has appealed to the Supreme Court from the order of the Board of Public Utility Commissioners directing it to furnish electricity free of charge to the municipal buildings of Plainfield, in accordance with a contract under which the company received its charter. The company claims that the enforcement of the order would violate both the State and federal constitutions and an act of 1911 prohibits it from furnishing free service and that the same act abrogated the contract between the city and the company.

## FIRE AND POLICE

#### Wants Change in Fire Alarm Boxes.

Boston, Mass.—Mayor Curley believes that the time has come when the bell attached to the doors of fire alarm boxes, and which rings when the doors are opened, should be done away with, in view of the fact that many persons who desire to give an alarm are so confused with the noise in opening the door of the box that they fail to pull down the hook. The mayor has called a conference of Fire Commissioner Grady and the chiefs of the department to consider this matter.

#### New York Police Commissioner to Make Changes.

New York, N. Y.—Police Commissioner Woods has announced that he will soon put into effect some of his ideas regarding the policing of a large city. According to his plans each section will be treated in reference to its own peculiarities. Local units will be the section and not the borough. The first matter for the Commissioner's attention will be the fixed post system. Woods said he would

modify it so that in the upper Tenderloin the policemen on duty will be given a block within which to patrol. On the upper East Side men will be put on post near signal boxes. Though the Commissioner is in favor of the fixed post system in every part of the city he believes that it requires too many men. The Commissioner has ordered that the physical conditions of station houses be reported to him. Police surgeons, it was said, should live within the district assigned to them, so that it will not be necessary, as it has been in many instances, for surgeons to come over a distance of 25 miles on calls from policemen.

#### The Conflagration in St. Augustine.

St. Augustine, Fla.—The conflagration in this city, which occurred on April 2, resulted in a property loss of nearly seven hundred and fifty thousand dollars. Four hotels, the court house, a full block of business buildings



VIEW SHOWING COURTHOUSE BURNING ON RIGHT.

and many residences were totally destroyed. The fire started in the Florida House and then swept through the heart of St. Augustine. The fire fighting equipment was immediately called to the scene. It was soon apparent that the equipment of the city was wholly inadequate to check the flames. A hurried call for aid was sent to Jacksonville



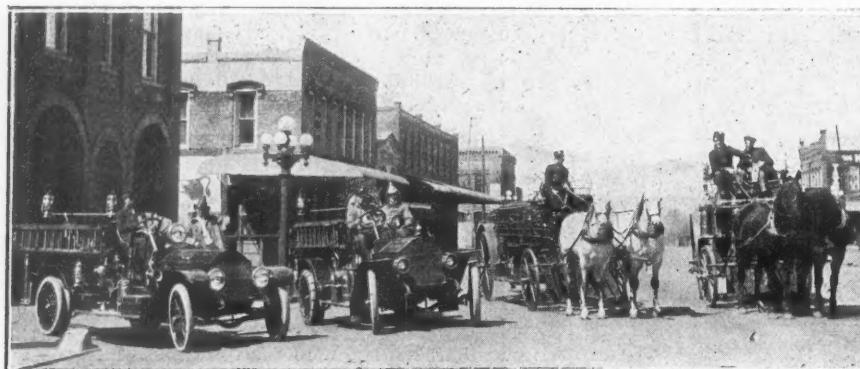
FLORIDA HOUSE BURNING IN THE DISTANCE.

and the fire apparatus of that city was shipped by railroad. Mayor Corbett, as a result of the fire, advocates the enactment of a fire limit ordinance. It is also urged that wider sidewalks and a sewerage system be constructed as well as better waterworks. Public buildings ought, it was said, to be erected on ground of sufficient dimensions to safeguard such structures against fires.

#### Small City Has Well Equipped Fire Department.

Longview, Texas.—Longview, a town of about 5,000 population, has shown its progressive spirit in the modern fire department it maintains. Of the two pieces of horse-drawn apparatus one is a combination wagon, and the other a city service truck. The American La France Company has installed two motor-drawn apparatus, one being a

rotary pumping engine, and the other a combination chemical and ladder. This town also has a "great white way."



Courtesy The Dallas News.

FIRE DEPARTMENT OF LONGVIEW, TEXAS.

The cluster light standards, bearing five lights each, are well shown in the accompanying illustration.

### MOTOR APPARATUS

#### Toledo Motorizes Fire and Police Departments.

Toledo, O.—The city of Toledo took its first important step toward the motorization of its fire and police departments, when five Willys-Knight cars were purchased. Two five-passenger touring cars and three two-passenger roadsters made up the order, the former to go into commission as flying squadron cars for the two principal police stations, and the roadsters as battalion chiefs' cars in the fire-fighting squad. The motors have 4-inch bore and 5½-inch stroke, developing forty to forty-five horsepower and ample speed for the quick work police and fire departments require of motor equipment.

#### May Order Seagrave Truck.

Middletown, N. Y.—The committee in charge of the selection of a motor apparatus has practically decided to purchase a truck made by the Seagrave Co., with an appropriation of \$8,500. The truck is a triple combination pumping engine, with 100 horsepower and a motor 7¾ by 9. It is fitted throughout with electric lights and an electric starter, and has space in the hose body for 1,000 feet of hose. It also carries a complete fire equipment, consisting of axes, hand extinguishers, crowbars, fire picks, salvage blankets, and two ladders, one 10-foot roof ladder, and the other a 20-foot extension ladder.

#### Place Order for Triple Combination.

Tamaqua, Pa.—After making a thorough investigation of fire apparatus, the Borough Council of Tamaqua, Pa., have just awarded the contract for one Triple Combination Chemical, Hose Car and Pumping Engine to James Boyd & Brother, Inc., Philadelphia. The committee was very favorably impressed with the new standardized models of the Boyd Company and noted the extra heavy construction and fine finish of the machines.

### GOVERNMENT AND FINANCE

#### Adopt Commission Government.

Bloomington, Ill.—By a large majority, the commission form of government has been adopted. There were 8,970 in favor of the proposition and 3,974 against it.

Orange, N. J.—The city has voted by a majority of 243 to adopt the commission form of government. There were 1,855 votes cast in favor of commission government and 1,612 against it. Three-fourths of the registered voters went to the polls, making it the largest referendum vote in proportion to the population ever held in the state.

Platka, Fla.—The city electorate has voted in favor of the commission form of government. The vote shows 171 for and 67 against the proposition.

#### Petition for Commission Government.

Florence, Ala.—A petition is being circulated among the legal voters of Florence asking that the aldermanic form of government be changed to the commission form. It has been stated that the councilmen favor the change, and it has received the sanction of the mayor. Quite a number have signed the petition, and a number have refused their signatures. If the required number of names is secured, the probate judge cannot call the election until September, as the law states that two years must elapse, after the last election, before any change can be made.

### RAPID TRANSIT

#### Township Votes to Buy Railway.

Manistique, Mich.—At the recent election Garden township, near here, voted to purchase the Vans Harbor Lumber company's railway, which extends from Vans Harbor to Cooks Harbor, on the Soo line. The lumber company has finished its cut and intended to tear up the railway, to be sold for scrap. The road runs through a rich farming district.

#### New Motor Bus Line Opens in Maryland.

Silver Hill, Md.—Recently a motor bus line opened through lower Maryland, traversing a section of the state which has recently come into popularity by reason of the construction of new macadamized roads within the past year or two. The contract for operating the line has been awarded to the Semmes Motor Line and will operate between this city and Brandywine. The route will be through Silver Hill, Reds Corners, Surrattsville and T. B. to Brandywine. The route is through a historic section of the state and surrounded on all sides by rich farm lands. Three large busses have been installed and the latter part of last week two thirty-passenger vehicles were added to the equipment, which will operate through La Plaza, Md., and the National Capital.

#### Washington May Have Municipal Railway.

Washington, D. C.—Municipal ownership of the street railways of the nation's capital is almost certain to be an accomplished fact before long. Only last week a subcommittee of the House Committee on the District of Columbia reported favorably to the full committee the Crosser bill providing for the acquisition, ownership and operation by the Commissioners of the District of Columbia of the street car lines and all their property. Under ordinary circumstances the favorable report of such a radical bill would not necessarily mean that the bill was scheduled to pass. With the Crosser municipal ownership bill, however, the case is different. Mr. Crosser declares positively that the House will pass the bill very soon after it is reported from committee, and he has assurances from the Senate that the bill will go through there without much trouble. It is reliably reported that the President will sign the bill, though he has not publicly indicated what his stand will be.

#### Street Superintendent Designs Waste Boxes.

Trenton, N. J.—T. McKeag, superintendent of streets, has designed a new style of box in which to deposit waste. It is of quite a large size and is painted red, with white lettering "Do it for Trenton. Put waste in here." The tins will be submitted to Mayor Donnelly for his approval, and if he is satisfied with the design about 20 will be ordered and placed at different places about the city.

#### Will Buy Flusher.

Niles, O.—Clean, sanitary streets are in prospect for Niles the coming summer. At a special session of city council an ordinance was passed transferring funds from the general fund to the street cleaning and repairing funds of the city to provide for the purchase of a flushing machine and a gasoline power roller. The flusher must be of sufficient power to thoroughly cleanse the street over

which it passes. It is thought that its use once or twice a week will keep the paved streets in excellent condition. The money with which the flusher and roller will be bought is interest which has accumulated on city funds and amounts to \$3,000.

#### Incinerator Operating at Low Cost.

Pasadena, Cal.—Commissioner Loughery was warmly congratulated by his fellow commissioners when he submitted his report for the operation of the city incinerator during the month of March, showing that the cost of incinerating has been reduced to 74½ cents a ton. This is the first time the cost has been brought below \$1 a ton, which was considered a reasonable figure for the work. The incinerator destroyed 393 tons and 1,020 pounds of refuse last month. The cost of collecting garbage was \$3.38 a ton, a low figure considering how small the quantity is at each house visited.

#### Deposed Fire Horses to Haul Garbage Wagons.

Marion, Ind.—The city administration has decided on a plan to employ the fire horses deposed by the purchase of auto trucks, in hauling garbage wagons, and within a few weeks these wagons will begin their rounds of the city, calling at private homes twice each week for all garbage and refuse matter. The city has no garbage consuming plant, but temporary arrangements will be made with a fertilizer company.

#### Street Flusher Proves Satisfactory.

Birmingham, Ala.—The new \$5,000 electric street flusher, which has been taken on approval by the city, is operating satisfactorily. Water from the large tank is forced out by means of automatically compressed air, thereby washing dust and dirt from the streets into sewers. In filling the tank, air is first allowed to enter and then water is forced in compressing the air at the top. When the nozzle is



Courtesy Birmingham Age-Herald.

BIRMINGHAM'S NEW ELECTRIC STREET FLUSHER.

opened, the water is propelled by the air and gravitation. The machine was manufactured by the General Motors Company and will be bought if it proves itself efficient. It is said that the street cleaning department will require two such machines to cover the city.

#### MISCELLANEOUS

##### Will Get Publicity Through Moving Pictures of City.

Pottsville, Pa.—The moving pictures of Pottsville city, its people and numerous features and attractions will be very popular and everybody will have a chance to get into them. Mayor Mortimer asked co-operation of everybody to make the "movies" of Pottsville all they should be, as these pictures will be exhibited throughout the United States and possibly abroad and will prove an advertisement of the city. City Hall is to be set afire by means

of patent smoke pots and the fire department will be seen in action extinguishing the blaze. All important fraternal orders, civic activities, public buildings, etc., will be included in the pictures.

#### Indiana Mayors to Meet.

Indianapolis, Ind.—Mayor Bell, who has been planning for several weeks about calling a meeting of Indiana mayors, has finally decided that the meeting will be held at the Denison hotel April 28 and 29. The mayor says that all mayors in Indiana, regardless of party affiliations, will be invited. It is planned to discuss many municipal topics at the meeting.

#### City to Spend \$10,000 on Golf Links.

Philadelphia, Pa.—Councils' finance committee has responded to the request of the Fairmount Park commission by reporting favorably a bill appropriating \$10,000 for a free public golf links in the park. It will rest with the commission to decide the character of the links to be built and the location.

#### Municipal Market for La Crosse.

La Crosse, Wis.—As the result of a gathering of farmers and merchants here to discuss plans for establishing a closer relationship between the city and country, it appears that La Crosse will inaugurate a municipal market. The city will hire an expert buyer and all the produce brought to town by farmers will be purchased at prices to be published in the daily papers the day previous. The city will pay for produce in checks and an effort will be made to dispose of it to home merchants. The balance will be shipped out of town.

#### Would Convert Sand Dune Region Into Park.

Gary, Ind.—There is a movement on foot to convert the sand dune region of northern Indiana between Gary and Michigan City, in Lake, Porter and LaPorte counties, into a national park. It is probable that the Indiana legislature and the national congress will both be asked to co-operate in the movement which now has the backing of the Prairie Club of Chicago, an organization devoted to the conservation of the natural beauties of the middle west.

#### Permits Cities to Have Employment Bureaus.

Norfolk, Va.—Senator J. A. Lesner at the last session of the legislature introduced a bill which passed, providing that cities may, if they see fit, establish bureaus for purpose of securing employment for those who are out of work. At the regular monthly session of the board of Aldermen an ordinance to create and establish the City of Norfolk employment bureau, to provide rules and regulations and make an appropriation therefor, was introduced by Alderman J. B. Brockett. Without discussion, the ordinance, which reads as follows, was referred to the finance and ordinance committees:

Section 1. That from and after July 1, 1914, there shall be and hereby is created a bureau to be known as the Norfolk City Employment Bureau, for the use of unemployed persons and those seeking employees.

Section 2. That said bureau shall be managed and conducted by the Board of Control of the city of Norfolk, and said board shall from time to time make such rules and regulations and appoint such employees as it may deem proper for the management and control thereof; provided, that before any person shall be appointed by the Board of Control for said bureau, his salary shall be fixed and determined by the city council.

Section 3. The Board of Control shall provide suitable quarters, stationary, supplies and equipment necessary for the use of said bureau.

Section 4. That the sum of thirty-five hundred dollars (\$3,500), or so much thereof as may be necessary, be and the same is hereby appropriated from current revenues to pay the necessary expenses of the said bureau during the fiscal year beginning July 1, 1914.

Section 5. That this ordinance shall be in force from and after its passage, and all ordinances or parts of ordinances in conflict herewith are hereby repealed.

## LEGAL NEWS

A Summary and Notes of Recent Decisions—  
Rulings of Interest to Municipalities

## Injuries in Street—Contributory Negligence.

Heaphy v. United States Wood Preserving Co. et al.—A city has a right to remove the asphalt in the streets for the purpose of making repairs, and was not liable for injuries to persons tripping on a street car rail exposed by the removal of the paving, if it took all reasonable precautions to make the place safe.—New York Supreme Court, 146 N. Y. S., 377.

## Grading Street—Surface Water.

Thorpe et ux. v. City of Spokane.—A city which, in making an initial grade of streets, filled in an old dry channel where it intersected such streets and constructed culverts sufficient to have carried off the water running in the channel at certain seasons, but which were useless because private owners had filled in the channel on their lots, was not liable for casting surface water on plaintiff's property, since the filling in of the private lots was the proximate cause.—Supreme Court of Washington, 139 P. R., 221.

## Street Improvements—Contracts.

McIntyre v. City of Los Angeles et al.—A city could not, after having awarded a valid contract for a street improvement, thereafter by a second contract release the contractor from performance according to the specifications of the first contract, and the remedy of the property owner was, under the express provisions of Street Improvement Act, an appeal to the city council, which could set aside the assessment and order the work done according to specifications.—District Court of Appeal, California, 139 P. R., 240.

## Utility Commission—Municipal Franchises.

Eastern Telephone & Telegraph Co. v. Board of Public Utility Com'rs.—The power of the board of public utility commissioners is not limited, by the statute, to supervising the execution of the permission and consent granted by a municipality, but includes the power to determine whether the privilege or franchise granted by the municipality is necessary for the public convenience, and properly conserves the public interests.—Supreme Court of New Jersey, 89 A. R., 924.

## Surface Water—Embankments.

City of Tucson v. Dunseath.—Before plaintiff's lot had been raised so as to be somewhat above the proposed street grade except in the rear, a ditch was dug along the street by another adjacent owner with the city's consent or acquiescence for the purpose of draining away the surface water, and thereafter the city engineer, merely in view of raising the street in the future and not for making a present improvement, dumped waste material in the street so as to make an embankment across the ditch and dam up the surface waters, which were thereby cast on plaintiff's land in a greater volume than they would have naturally flowed thereon. Held, that the city was guilty of an actionable wrong in thus impounding waters and casting them upon plaintiff's land.—139 P. R., 177.

## Occupation Tax—Validity.

Southern Express Co. v. Town of Ty Ty.—A municipal tax on an occupation must be reasonable with reference to such vocation. In a petition to enjoin the collection of a municipal tax laid on a business solely for revenue (which appears to be the character of the ordinance under attack in the present case), good cause for the grant of injunctive relief was shown, where it was made to appear at the interlocutory hearing that the gross revenue, after paying the railroad company for its services as carrier, derived by the plaintiff, the Southern Express Company, from its office and business within the jurisdiction of the municipality imposing the tax, was only \$320.82, and that the tax imposed \$50, was about 16 per cent. of such revenue, and that the municipal authorities were threatening and intending to enforce the tax ordinance in such manner as to interfere with and render the orderly conduct of its business impossible.—Supreme Court of Georgia, 81 S. E. R., 114.

## Death of Pedestrian—Evidence of Negligence.

Glancy v. McKees Rocks Borough.—Where, in an action for wrongful death, the evidence that defendant's negligence was the proximate cause is circumstantial and the inferences reasonably deducible from all the evidence would lead equally as well to the conclusion that death was due to other causes, a verdict for plaintiff, being a mere guess, will be set aside on appeal.—Supreme Court of Pennsylvania, 89 A. R., 872.

## Inquiries—Falling Sign.

City of Purcell v. Stubblefield.—On January 28, 1909, it was the duty of the city of Purcell, being a city of the first class under the statutes of Oklahoma, to use reasonable care to keep its streets and sidewalks in a safe condition for persons using the same, and for failure to perform this duty said city was liable in damages to one injured by a sign falling and striking him, which had been permitted to remain across and above the sidewalk on one of its streets; the negligence of such person not contributing to such injury.—Supreme Court of Oklahoma, 139 P. R., 290.

## Bill Boards—Police Power—Public Safety.

People ex rel. Van Beuren & New York Bill Posting Co. v. Miller, Superintendent of Buildings.—Greater New York Building Code, providing by section 2 that the Code is remedial and to be liberally construed, and requiring by section 4 the filing of plans and statements before the erection of any structure and the obtaining of approval and permit therefor, and by sections 143 and 144 prescribing fire limits within which no frame or wood structure should be built, and limiting the height of signs and billboards within such limits to 10 feet, and those constructed entirely of metal or of wood covered on all sides with sheet metal, including the uprights and braces, to 18 feet 6 inches high, such signs to be properly supported and braced so as not to be dangerous, is calculated to promote safety and prevent the destruction of property by fire, and is a valid and reasonable exercise of the police power.—New York Supreme Court, 146 N. Y. S., 403.

## Notice of Injury—Verification.

Haner v. Village of Owego.—Where notice of injury on a sidewalk was not served on the municipality within the time required by its charter, but plaintiff on the trial gave evidence of mental and physical condition to relieve her of the default, the jury's finding in her favor will not be disturbed on motion for new trial. The Owego Village Charter provides that the village shall not be liable for injuries on sidewalks, unless written notice of the injury is given the board of trustees. The Village Law requires a written verified statement of the nature of the claim, and section 380 provides that a village incorporated under a special law shall be subject to the provisions of the general village law, which are not inconsistent with such special law. Held that, the general village law not being inconsistent with the Owego village charter as to the verification of the notice of injuries, a verified notice of injury was not required to be given to the village trustees.—New York Supreme Court, 146 N. Y. S., 475.

## Rates—State and Municipal Regulations.

Portland Ry. Light & Power Co. v. City of Portland et al.—Since the right to regulate rates of public service corporations is a governmental power vested in the state in its sovereign capacity, the state of Oregon having passed a public utility law vesting in the State Railroad Commission jurisdiction to supervise and regulate every public utility in the state, giving to such commission exclusive authority to investigate rates charged by public utilities and, if found unreasonable, to fix and order substituted therefor such rates as shall be just and reasonable, and providing that every public utility shall file with the commission schedules of its rates and that no changes shall be made therein except as in the law provided, such act deprived the city of Portland of power to pass an ordinance requiring a street railway company in such city which had filed its rates with the Railroad Commission to sell six tickets for 25 cents after the ordinance took effect.—U. S. District Court, 210 F. R., 667.

## NEWS OF THE SOCIETIES

## Calendar of Meetings.

April 23-24. VIRGINIA PUBLIC HEALTH ASSOCIATION.—Annual meeting, University of Virginia, Charlottesville. Dr. M. G. Perrow, Lynchburg, Va., president. Dec. 14-17.

AMERICAN ROAD BUILDERS ASSOCIATION Annual Congress and Exposition, International Amphitheatre, Chicago, Ill. E. L. Powers, secretary, 150 Nassau Street, New York City.

April 28-29. INDIANA MAYORS' ASSOCIATION. Meeting, Indianapolis. Mayor Bell, Indianapolis. MAY 5-7.

NATIONAL FIRE PROTECTION ASSOCIATION.—Annual Meeting, Chicago, Ill. F. H. Wentworth, Secretary, 87 Milk street, Boston, Mass.

April 9-10. FLORIDA STATE GOOD ROADS ASSOCIATION.—Annual meeting, Gainesville. A. B. Dunning, Secretary, Jacksonville.

April 16-17. SNOW REMOVAL CONFERENCE.—City Hall, Philadelphia, Pa. M. L. Cooke, Director of Public Works.

May 11-15. AMERICAN WATER WORKS ASSOCIATION.—Thirty-fourth Annual Meeting, Philadelphia, Pa. J. M. Diven, secretary, 47 State street, Troy, N. Y.

AMERICAN ASSOCIATION FOR THE PROMOTION OF HYGIENE AND PUBLIC BATHS.—Annual Convention, Newark, N. J.

May 14-15. NORTH CAROLINA ASSOCIATION OF MAYORS.—Annual convention, Charlotte. May 18-23.

FIRST CANADIAN AND INTERNATIONAL GOOD ROADS CONGRESS.—The Arena, Montreal, P. Q. G. A. McNamee, General Secretary, New Beiks Buildings, Montreal.

May 20-30. ELECTRICAL LEAGUE OF CLEVELAND, O.—Exposition, Coliseum, Cleveland. O. W. G. Rose, Manager, Illuminating Building, Cleveland.

May 26-28. CITY MARSHALS AND CHIEFS OF POLICE ASSOCIATION OF TEXAS.—Twentieth Annual Convention, San Antonio. C. W. Newby, Secretary, Fort Worth.

June 1-3. NATIONAL CONFERENCE ON CITY PLANNING.—Annual Meeting, Toronto, Canada. Flavel Shurtleff, Secretary, 19 Congress street, Boston, Mass.

June 1-5. NATIONAL ELECTRIC LIGHT ASSOCIATION.—Thirty-seventh Convention, Bellevue-Stratford Hotel, Philadelphia, Pa. T. C. Martin, Secretary, 29 West 39th street, New York City.

June 3-5. CONFERENCE OF MAYORS AND OTHER CITY OFFICIALS OF THE STATE OF NEW YORK.—Fifth Annual Conference, Auburn, N. Y. W. P. Capes, Secretary, 105 East 22d street, New York City.

June 23-25. SOUTH CAROLINA STATE FIREMEN'S ASSOCIATION.—Tenth Annual Meeting and Tournament, Florence, Ala. R. S. Hovel, Secretary, Sumpter, S. C.

June 30-July 4. AMERICAN SOCIETY FOR TESTING MATERIALS.—Seventeenth Annual Meeting, Hotel Traymore, Atlantic City, N. J. Edgar Marburg, Secretary, University of Pennsylvania, Philadelphia, Pa.

OCTOBER 20-23. INTERNATIONAL ASSOCIATION OF FIRE ENGINEERS.—Annual Convention, New Orleans, La. James J. McFalls, Secretary, Roanoke, Va.

## American Water Works Association.

As provided by the new constitution, election of officers will be held by letter ballot. Ballots must be in the secretary's office, 47 State street, Troy, N. Y., May 14. There are four nominees for president, the one receiving the second largest number of votes will be declared vice president, they are George G. Earl, Nicholas S. Hill, Jr., Leonard Metcalf and Theodore A. Leisen. For treasurer, James M. Caird, Edward Bartow and F. C. Jordan. For trustees, Allen W. Cud-

deback, George A. Johnson, Frank C. Jordan, Charles R. Bettes, M. V. Baker and Allen Hazen.

The following arrangements have been made for the thirty-fourth annual convention, Philadelphia, May 11-15.

Special parlor car on 10 A. M., May 11; train from Pennsylvania station, New York City. For reservations address O. T. Boyd, div. passenger agent, 263 Fifth avenue, New York.

From Pittsburgh, arrangements to be made through T. C. Clifford, Pittsburgh Meter Co.

From Chicago, via Pennsylvania Limited, 5:30 P. M. May 10. Address F. J. Bradley, care National Meter Co.

From the South, address H. M. Lofton, Columbian Iron Works, Chattanooga, Tenn.

## Snow Removal Conference.

At the meeting of city officials dealing with problems of snow removal held at Philadelphia, April 16-17, there was given to that city the credit of having adopted the most practical and successful solution to the snow disposal problem both on highways and railroads. By the use of plows, piling the snow into heaps along the curb, and then carted and dumped into sewers through manholes, is the municipal system of disposal. The Pennsylvania Railroad has a type of steel gondola, fitted with steam pipes resting upon a steel table half the depth of the car, which reduces the snow to water as fast as 20 men can shovel snow into it. Through a drain pipe, the top of which is slightly below the level of the top of the car, the water is released.

These two plans seemed to receive the unofficial indorsement of the Snow Removal Conference, over which Director Cooke presided in the reception room of the Mayor's office. The representatives of the various cities presented their views, together with those of the street railway and steam railroad companies, and the conference will be recalled for a review and adoption of the report to be made by a committee some time this fall. This committee is composed of the following: Captain Mark Brooke, chairman, United States Corps of Engineers; J. L. O'Toole, Superintendent of Bureau of Highways and Sewers, Pittsburgh; William H. Connell, Chief of the Bureau of Highways; William H. Lynch, Superintendent Departments of Streets and Public Improvements, Harrisburg, and R. B. Hamilton, vice-president Philadelphia Rapid Transit Company, Philadelphia.

Many of the speakers were on a "war footing" and wanted to "fight" snow. The cost was a problem that could not be measured by cities nor by storms. It was admitted that the one weakness in the present effort is the plan to "remove snow." The modern idea is to "fight" it; that is get out and start to dispose of the snow as fast as

it may fall. But, like Huerta, the snow may not show fight. Chief Connell got his force out of bed one night on the final blow of the winter, dragged the contractors and their teamsters out of bed, only to find that as soon as the time for daylight arrived a warm wave came along, rain fell and there was no show to fight. It was admitted that many of the difficulties in big cities resulted from attacking the snow too late.

Pittsburgh and Philadelphia get rid of their snow by dumping it into sewers. The idea seemed to prevail so strongly that other cities with less favorable conditions could not depend upon the snow being carried off. Chief Connell, of the Highway Bureau, proposed installing a flush plug in the manholes where the greatest amount of snow is dumped and in this way have it speedily carried away. Chief Webster, of the Survey Bureau, who was expected to oppose the use of sewers, said that if the top of the snow was so removed as not to carry the street dirt with it and not dump chunks of ice, no harm would be done.

The attitude of the trolley companies came in for discussion. Martin Schreiber, an engineer of maintenance of ways of the Public Service Railway Company, operating systems in New Jersey from Camden to Jersey City, said that the companies were bearing their share of the cost and making a clear way for even the drays and other vehicle traffic, and that by co-operation with the public, the ways could be cleared. He complained that there is not enough done by municipalities in co-operation.

John J. Orr, of the Southwest Business Men's Association, who is a coal dealer, complained that too much money is expended for snow removal without return. He proposed that if the snow is to be removed in a given section of the city, the business houses so benefited should be assessed for the cost.

Mayor E. B. Jermyn, of Scranton, advocated the flushing of streets in inland cities, as a means of getting rid of snow. He told how it was done in Scranton and at a minimum cost. New York expended \$2,500,000 in removal of snow, which was explained in a paper by Street Cleaning Commissioner Fetherston, who was prevented from attending. The excessive cost was discussed by others. The system in Boston, explained in a paper by Commissioner Rourke, was criticised by E. D. Very, consulting engineer of New York, who presided at a "round table" luncheon at the Adelphia. Dr. Marie D. Equi, member of the Civic League, Portland, Ore., discussed the citizens' part in snow removal from an industrial and social point of view. She advocated a snow reducer on the principle of a concrete mixer which, if heated under steam pressure, would reduce the snow as received.

Cleveland Electrical Exposition. Cleveland's electrical exposition in May will be twice as large as Buffalo's,

which closed two weeks ago, according to a report of the executive committee of the Electrical League presented last week at a meeting at the Hotel Statler, Cleveland, O.

The occasion for the gathering of the electrical men, the largest ever held here, was the close of an eight weeks' campaign of members to sell space for the exposition. Nearly \$20,000 worth of space, 100 per cent more than the total at the Buffalo exposition, has been sold.

Hearty support for the exposition by members of prominent civic organizations of the city was voiced in addresses by Mayor Baker, F. D. Lawrence, president of the Chamber of Industry; A. C. Klumph, president of the Cleveland Rotary Club; Paul E. Ryan, president of the Cleveland Advertising Club; Alfred G. Clark, president of the Real Estate Board, and E. A. Roberts, secretary of the Builders' Exchange.

"The development of electricity and the many uses to which it has been put has been one of the wonders of the world," said Mayor Baker. "It is the aim of the exposition to show the people this development and I hope it will be a success in every way."

About fifty exhibitors have taken space. Displays by the United States government, Case School of Applied Science and the Illuminating Engineering Society of Cleveland are planned as features, H. S. Green, chairman of the meeting said. Committees are now at work planning moving picture, musical and other forms of entertainment during the exposition.

#### State, County and Municipal Health Officers' Association of Georgia.

The fifth annual meeting of the association convened at Atlanta, April 14, 1914. The association endorsed a bill to be presented to next Legislature creating a County board of health in every county in the state, with a whole time health officer for each county.

A most important topic was taken up, the discussion of paper of Dr. Terry, in its dealing with the negro problems of health. It was considered to be by far the leading work which should be undertaken in every Southern community, both for its uplift of the race into a greater freedom from disease, and because it is at present such a prime factor in magnifying the records of deaths, being in many cities three times greater than that of whites.

Election of officers for following year resulted in choosing Alfred V. Wood, of Brunswick, Ga., as President and D. T. Abercrombie, Health Officer of Brunswick, Ga., as Secretary.

#### New York State Conference of Mayors and Other City Officials.

President John J. Irving has announced that the conference will hold its fifth annual meeting in Auburn on June 3, 4 and 5. The advisory committee has drafted the preliminary plans and is now inviting experts with national reputations to discuss the

important problems confronting the cities of the state.

Two important subjects to come before the conference this year will be municipal taxation and city planning. Since the last conference, a special committee has been making a taxation and assessment survey of the cities. The report and recommendations of this committee will be presented by the chairman, Lawson Purdy, president of the Department of Assessments and Taxes, of New York City. The conference's advisory committee of experts will present a preliminary report on the city planning survey which it is now making.

The city officials will this year discuss the city manager plan of government, fire prevention, administrative efficiency, the development of parks and playgrounds, the repression of commercialized vice, and efficiency in public health work.

#### PERSONALS

Leisen, Theodore A., chief engineer Louisville Water Company, has been offered the position of general superintendent of the Detroit, Mich., Water Works at a salary of \$6,500 to succeed George H. Fenkel, resigned.

Staal, George F., Milwaukee, Wis., has been appointed city engineer, succeeding Joseph Mesiroff.

Shields, James W., has been elected city engineer of Altoona, succeeding Frans Engstrom.

McCue, Martin, Long Branch, N. J., county road supervisor has been re-appointed for a term of five years at an annual salary of \$2,000.

Parmelee, L. R., Helena, Ark., has been re-elected city engineer.

Douglas, E. P., West Helena, Ark., has been elected city engineer.

Jacks, T. M., has been re-elected county surveyor of Phillips County, Ark.

Gregory, Julius H., consulting engineer of Hering and Gregory, New York City, has been retained by the city of Charleston, S. C., to make a valuation of the property of the Charleston Light & Water Co.

Hayes, Dr. W. C., Lorain, O., has been appointed health officer.

Bassetti, B. B., New Britain, Conn., of the Stanley Rule and Level Co., wishes to correspond with officers of a number of chambers of commerce with a view of obtaining suggestions regarding patriotic and civic work.

Hunter, John P., Denver, Colo., commissioner of improvements, has been named by the Public Utilities Commission as engineer of a new municipal water plant system for Denver.

Kelley, Patrick J., Bangor, Me., has been chosen chief of the Fire Department.

The following mayors have been elected in Michigan:

Albion—Burnett, Democrat.

Alma—Prof. A. B. Cook, Republican.

Adrian—A. W. Chase, Democrat.

Alpena—William A. Comstock, Democrat.

Boyne City—C. C. Schaub, Union. Bessemer—W. J. Trevorthen, Tax Reform.

Benton Harbor—Dr. C. M. Rynoe, Democrat.

Cheboygan—J. C. Rittenhouse, Democrat.

Coldwater—G. E. Kleindinst, Republican.

Charlotte—George Brackett, Democrat.

Eaton Rapids—C. H. Horner, Republican.

Flint—John R. MacDonald, Progressive.

Grand Haven—Nathaniel Robbins, Citizens.

Fremont—W. S. Neff, —.

Greenville—C. H. Gibson, Republican.

Grand Rapids—George E. Ellis, non-partisan.

Gladstone—F. M. Coslett, Republican.

Hancock—Abram Ojala, Citizens.

Hastings—William R. Jamieson, Republican.

Hillsdale—L. A. Goodrich, Republican.

Iron Mountain—Dr. S. E. Cruse, Citizens.

Ionia—Fred W. Green, Republican.

Ishpeming—G. G. Barnett, Republican.

Ironwood—Henry Rowe, Citizens.

Kalamazoo—A. B. Connable, Republican.

Lapeer—R. F. Frary, Republican.

Ludington—A. A. Keiser, Republican.

Manistique—Joe Pattinson, Democrat.

Muskegon—John H. Moore, Progressive.

Mount Clemens—William F. Nank, Republican.

Mason—A. A. Bergman, Democrat.

Marine City—George W. Becker, Democrat.

Muskegon Heights—A. J. Sinney, —.

Menominee—Marshall B. Lloyd, Republican.

Manistee—Frank A. Mitchell, Progressive.

Mackinac Island—M. G. Bailey, Citizens.

Midland—Harry Myers, Republican.

Marshall—C. E. Gauss, Democrat.

Negaunee—W. S. Heggoton, Citizens.

Norway—J. C. Weckstrom, Citizens.

Owosso—James De Young, Republican.

St. Ignace—W. S. Wing, Republican.

St. Clair—Max Jennings, Republican.

St. Johns—George H. Shenhale, Democrat.

St. Louis—J. H. Whitney, Republican.

St. Joseph—A. J. Wallace, Citizens.

Stanton—E. S. Stebbins, Republican.

South Haven—Harry W. Barnes, Progressive.

Sandusky—George Tarrant.

West Branch—E. R. Chapin, Union.

Yale—James Wallace, Republican.

Ypsilanti—Lee Brown, Democrat.

Zeeland—John Moek, Progressive.

## NEW APPLIANCES

### CANADY COMBUSTION CONTROLLER.

#### Canady Combustion Controller Automatically Controls Air-Blast Damper and Flue Damper.

The Blaisdell-Canady Co., 90 West street, New York, manufacture a furnace controller which automatically regulates the amount of air supplied to the furnace and the discharge of gases from it, maintaining a slight vacuum in the fire box. It is claimed to effect a considerable saving in the amount of fuel burned.

The theory on which the controller is based is this: If not enough air is admitted to the furnace there is a considerable loss due to the fact that some of the fuel combines with the oxygen of the air to form carbon monoxide which has a heat value of only 4,400 British thermal units, instead of being turned to carbon dioxide having a heat value of 14,650 British thermal units. An excessive quantity of air represents a loss equivalent to the heat required to raise the excess to the temperature of the flue gases and a still further loss due to the lowering of the initial temperature in the furnace and the increase of the velocity of the gases due to the increased volume. As the absorption of heat from the furnace gases by the water in the boiler is proportioned to the difference in temperature and time of contact, it is readily seen that with an excess of air the evaporation power of the boiler is decreased.

The apparatus used consists essentially of a steam or electrically-driven fan, a regulator to control the speed of these fans according to the variations of steam pressure and a Canady combustion controller having duplex cylinders installed upon each furnace to control the position of the

air-blast damper and the individual boiler uptake damper. The purpose is to maintain a slight vacuum, .01 to .05 inch.

The suction or the pressure in the furnace (A) is communicated to the swinging plate or diaphragm (C) through the tube (B). A suction or partial vacuum in excess of that desired in the furnace will cause the diaphragm (C), operating the controller valve (F), to swing inward, as shown by the dotted line (E). The valve (F) admits water pressure to the

When the piston in cylinder (G) has made its full stroke, the piston in cylinder (J), which is more heavily weighted, will then move upward, thereby closing the damper (K) as much as necessary to maintain the required vacuum in the furnace.

The damper (K) is set to operate the boiler at the desired rating and only changes from this position when the steam is at maximum pressure and the fan slows down, or when the fire needs cleaning. Such conditions produce a greater vacuum in the furnace, which causes the diaphragm (C) to move inward and the piston in cylinder (G), which is less heavily weighted than that in (J), to rise to its highest point.

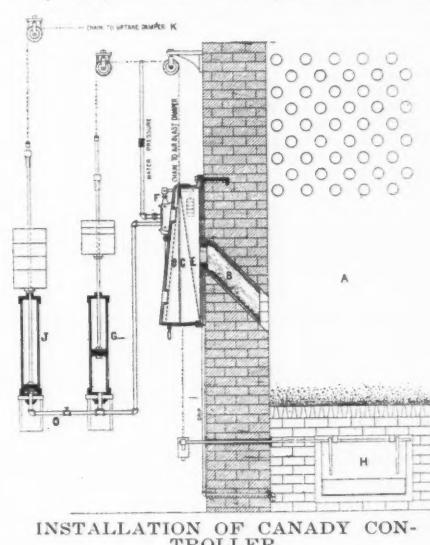
When this occurs the piston in cylinder (J) rises and partially closes damper (K) to meet the changing conditions.

Damper (K) thus governs the furnace for the time and gradually decreases the vacuum until the diaphragm swings near the center when the damper (K) will again come to rest. When the fan again speeds up, due to falling steam pressure, or after the fire has been cleaned, the piston in J will return to its seat and the piston in cylinder (G) will again control the furnace and cause damper (H) to admit air as required. The supply of air is thus regulated and the furnace resumes its normal condition.

The air admitted by damper (H) is supplied by a power-driven fan and for any variation of steam pressure is controlled by a special regulator which automatically changes the speed of the fan and increases or diminishes the supply of air as needed.

#### CONDUIT ROD COUPLING.

The Chicago Conduit Rod Coupling Company, 310 Cuyler avenue, Chicago, Ill., manufactures a malleable iron coupling for conduit rods, of very substantial design. The joint is finely finished and not a mere hook. The tongue which enters the groove in the other portion of the joint fits tightly against the butt of the other casting



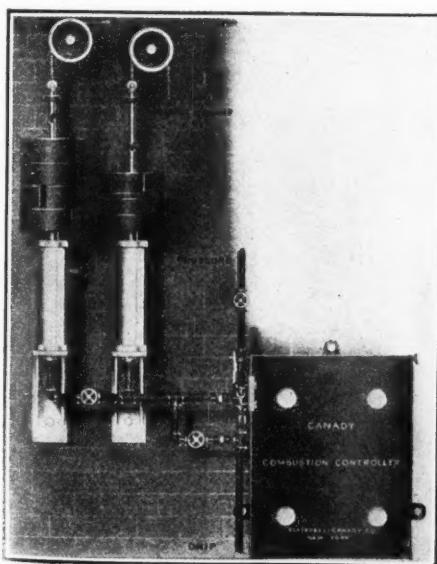
INSTALLATION OF CANADY CONTROLLER.

cylinder (G), which controls the position of the air supply damper (H), which will open, allowing air under pressure to pass below the grates and through the bed of fuel, until the vacuum over the fire is restored to the desired point.

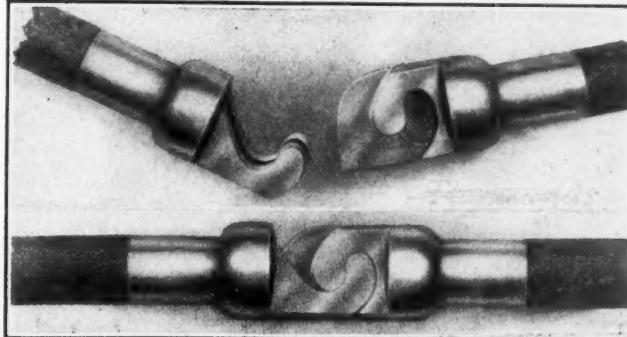
Should there be the slightest decrease in the vacuum desired in the furnace, the diaphragm (C) will swing outward, as shown by dotted line (D), and reduce the air supply, by closing the damper (H), as much as necessary to restore the desired condition in the furnace.

When the diaphragm is at the neutral position (C), the ports in valve (F) are closed and the dampers (H) and (K) are held in stationary positions until an increase or decrease in the air supply is required.

The cylinder (J), which is connected to cylinder (G), by pipe (O), also by a chain to damper (K), automatically controls the operation of the uptake damper (K), and assists in maintaining the desired condition in the furnace.



CANADY CONTROLLER.



CHICAGO CONDUIT ROD COUPLING.

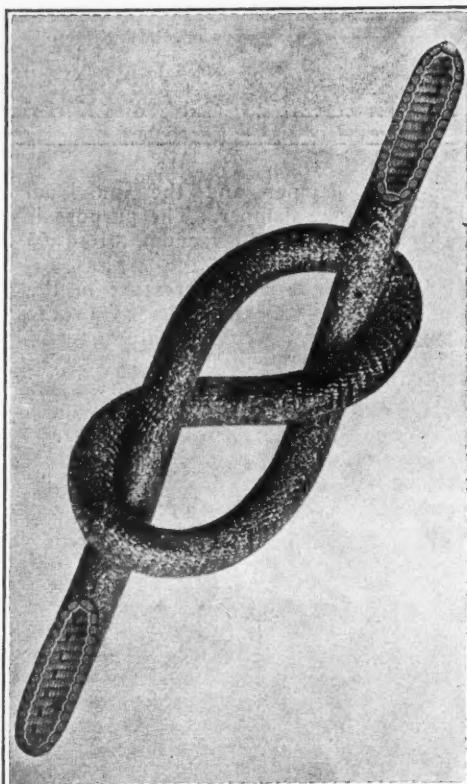
absolutely preventing end play. It prevents lost motion in twisting as there is only enough side play to permit the rods to be used in conduit laid with slight irregularities. The joint is claimed to be uniformly strong in every direction, the only safe construction, as the strain may come from any side. The thickest part of the casting is where the greatest wear occurs. Four foot rods may be connected and disconnected easily in a small manhole. The socket has double rivet holes and the tongue is pierced for attaching a pulling cable and it also helps in cleaning a joint when necessary. The New York agent for this coupling is B. S. Barnard, 50 Church street.

**A-W REGULATOR.**  
Used at Station for Control of Series Tungsten Lighting Circuits.

Automatic regulators for tungsten lamps for series street lighting are of two classes, those used at the central station and those used at each lamp. The A-W regulator made by the Electric Appliance Company of Chicago is of the former class and employs film cutouts at each socket. The standard type of constant current transformer used in series arc lighting may be used for this purpose but it is much less sensitive than the A-W apparatus. The A-W controller permits running series tungsten circuits from constant alternating current supply mains and it provides instant regulation without the use of any moving parts.

The outfit consists of three parts, a regulator which is a transformer of special construction, an adjuster coil and a station panel.

The transformer is oil filled, self-cooling, mounted in an enamelled iron case. It is equipped with a number of percentage taps which enable the circuit to be started at 50 per cent. capacity and also to be adjusted to full load conditions of power-factor and efficiency. At any adjustment of the load the power-factor remains about 80 per cent. and the efficiency 96 per cent. The percentage taps also change the current adjustment. For instance, 6.6



DURADUCT.

amperes may be carried on the circuit until midnight and after that 4.5 amperes. This method lengthens the life of the lamps and permits simple wiring.

The adjuster coil is an automatic inductive coil which provides refinement in current adjustment, electrically, having the effect of the mechanism of ordinary series arc-lamp regulators. The coil is mounted in an iron case filled with an insulating compound.

The panel is of marble with iron pipe frame, traces, etc. It measures 18x48 inches. On it are two primary stab switches with receptacles, a fire-gong circuit adjusting switch and an ammeter with transformer in the back of the board.

**DURADUCT.**

Duraduct is the name of a flexible woven conduit made by the Tubular

Woven Fabric Co., Pawtucket, R. I. It is claimed to be the most durable conduit made and that after hammering, crushing, kinking, looping or twisting, it will straighten out as good as new.

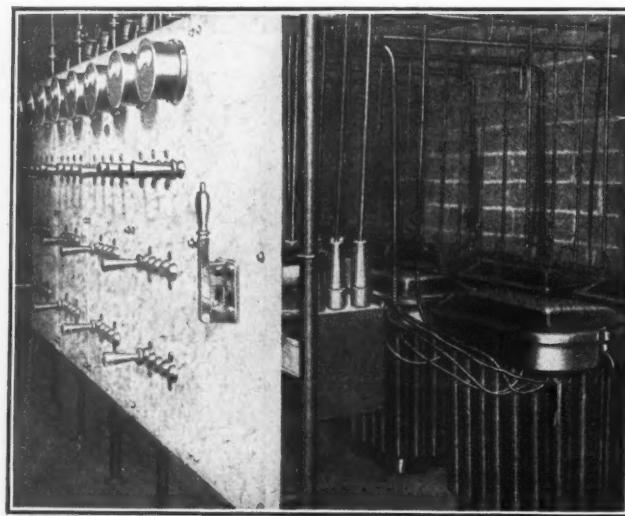
The construction is shown by a glance at the illustration. It is a one-wall fabric, built up of an outer surface of woven cotton, an intermediate layer of hard twisted insulating paper and a woven cotton interior surface, all interwoven, forming a single wall structure that is indestructible, inseparable and non-collapsible.

When fishing, the wire slides over the "roller bearing" construction on the interior, thereby avoiding friction of a flat surface, lessening it by 75 per cent., it is claimed. The cost of Duraduct is said to be no greater than that of any other conduit.

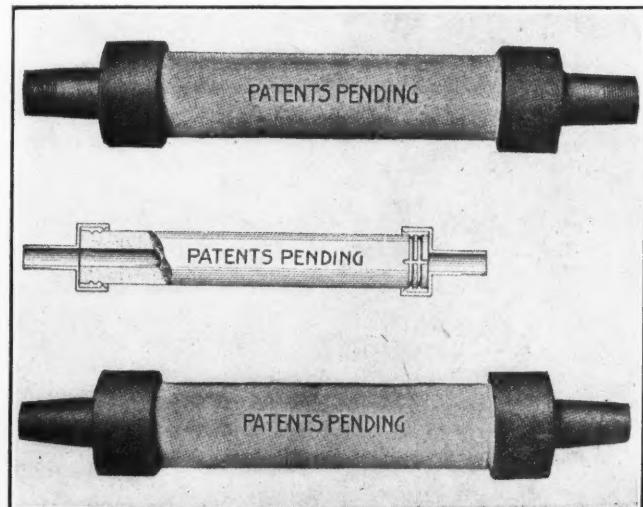
**SAMSON PIPE INSULATOR.**

The Drew Electric and Manufacturing Co., Illinois and Market streets, Indianapolis, Ind., claim to have solved the problem of preventing service pipes from being eaten away by electrolysis. This is done by insulating the pipe by inserting a Sampson Pipe Insulator.

As shown by the accompanying illustrations, the insulator consists of a dense porcelain tube of eight to eighteen inches in length, according to service required, capped at each end with bronze castings. The porcelain is heavily glazed inside and out, except that portion of the outer surface covered by the end caps. This surface has circular and longitudinal grooves, into which lead is poured after the end caps are in place. This fusible filler, running into the grooves, locks against corresponding ribs inside the end caps and forms a perfect union between the tube and the end castings, and forms a joint impervious to either gas or water. The proportions of the tube and end castings give a liberal factor of safety over any possible pressure or mechanical strain. The insulator has repeatedly withstood as high as four hundred pounds water pressure test and five hundred pounds air test, it is stated, and mechanically the insulator meets every requirement. As to its electrical



A-W REGULATOR.



DEVICE FOR PREVENTING ELECTROLYSIS.

insulating efficiency, the recital of one random test will be evidence of its correctness, in principle and performance. Ammeter tests showed a gas main positive to rail 250 amperes, at 10 volts. After insulator was installed and hole filled, the service pipe showed no current whatever.

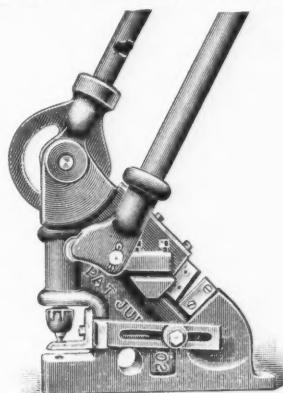
The specific advantages claimed for this insulator are its strong construction of bronze and glazed porcelain, the ease of installation, the low cost, and its properties as an electric insulator. In service pipes, for instance, it is stated that it will separate into small sections the extensive continuous underground metallic conductor that exists in all large cities. It also prevents electric currents from entering buildings by way of service pipes, it is added, thus avoiding electrolysis on structures and fittings. Further, it is stated that it will stop mains from loading up to a high amperage by the collection of currents through service pipes in contact with foreign metallic

structures; and by breaking the path of the current it bars current from the main so that there will be no flow from the main through the service pipes with the electrolytic jump from them.

#### Punch, Shear and Bender Combined.

J. F. Kidder Mfg. Co., Burlington, Vt., manufacture a machine for iron

THE  
LITTLE  
BLACK-  
SMITH.



workers which, on account of the variety of work it handles, is called the Little Blacksmith. It punches, shears and bends iron, performing the three separate and distinct duties without readjustment. The punch in no way conflicts with the shear and bender, or vice versa. Their relations are identically the same as the claw is to the claw hammer. The punch and shear are worked by the one lever. In case of breaking a punch it may be reground and washers used to make up the original length. The rigid shear blade may be adjusted to take up all wear. The bender has two set screws to adjust for the different thicknesses of iron, also an adjustable stop or guage. Forms may be placed in the receptacle, to form circles O's, G's, etc. The machine will punch and shear angle iron. The machine is made of steel, wrought and cast iron. The construction is easily seen from an examination of the illustration.

## INDUSTRIAL NEWS

**Cast Iron Pipe.**—Chicago—Quotations: 4-inch, \$26; 6 to 12-inch, \$24; 16-inch and up, \$23.50. Birmingham—Plants are operating at sufficient capacity to prevent large stock accumulations. Quotations: 4-inch, \$21; 6-inch and up, \$19. San Francisco—Several small municipal inquiries have appeared. New York—Public lettings are not numerous. The general demand is holding up good but competition is keen. Quotations: 6-inch, car loads, \$22 to \$23.

**Lead.**—Market is dull. Quotations: New York, 3.80; St. Louis, 3.675.

**Rotary Pump.**—Herman Dock, Watch Hill road, Westerly, R. I., has designed and built a rotary pump which was recently given a successful six-hour test. The pump is described in press reports as being built of only thirteen different parts and weighs less than 200 pounds. It is  $2\frac{1}{2}$  inches wide and 9 inches in diameter. In addition to the gears in the pump there are rings which vary the amount of discharge according to the quantity in operation. At the test the pump is stated to have thrown a  $\frac{1}{2}$ -inch stream a distance of 180 feet. The pump is intended for use in motor fire apparatus and it is stated that the Philadelphia fire department is conducting tests with one.

**Gasoline Tractor.**—The Killen-Straight Mfg. Company, Appleton, Wis., capital \$200,000, has been incorporated for the manufacture of gasoline tractors and heavy duty hauling machinery. W. H. Killen and W. K. Strait, engineers and designers of the tractors, and the principal owners, have been manufacturing them for some months. The company is now ready to begin manufacturing on a large scale and the incorporation is to facilitate the project. It will begin the equipment of a shop at once, using the present works as a nucleus.

**Diesel Engine.**—In the book published under the above caption by Bush—Sulzer Bros.—Diesel Engine Co., of St. Louis, Mo., the following statements are made regarding the increased use of their engines. In December, 1907, Diesel engines amounting to 9,665 brake horsepower were operating in central station plants in the United States. Of these plants, 75 per cent. have since bought additional units, their reorders in brake horsepower amounting to 155 per cent. of the original amount purchased on first order, 55 per cent. reordering after original purchases had shown five years or more of successful, economical operation. The horsepower sold on reorders to these central station plants now amounts to 68 per cent. of all the horsepower they had in operation in 1907. That sold in reorders up to and including December 1907 was 29 per cent. of that installed at the time, while that bought on reorders at this date is 38 per cent. of that now in operation. The smallest equipment operated in a Diesel central is of 75 brake horsepower, the largest 1,125 brake horsepower.

**Oil Tanks.**—The Indian Refining Company, New York City, has placed an order with the Riter-Conley Mfg. Company, Pittsburg, Pa., for 48 storage tanks to be erected in the East. The order will require 250 tons of plates.

**Speare's Asphalt Road Oil.**—Alden Speare's Sons Co., Boston, Mass., will use a motor sprayer for applying their No. 1 Speare's Asphalt Road Oil B to the streets of Newburyport, Mass. The material contains 45 to 50 per cent asphalt. The work will cost \$0.011 per square yard. This was an alternative proposition to supplying oil for \$0.06 $\frac{1}{2}$  per gallon, applied.

**Kissel Kar Truck.**—Frank Nelson, Missoula, Mont., chairman of the county commissioners, recently received a 50 horse power Kissel Kar truck, specially designed for highway construction. Missoula county has 150 miles of roads and the plan is to put gravel on them. If the county purchases a steam shovel as proposed it will also have to buy another motor truck. The county commissioners of Silver Bow county have inspected the outfit and seem much interested in it.

**Motor Trucks.**—The Kelley-Springfield Company, Springfield, O., have sold a one and two ton motor truck to the city of Houston, Tex. Trucks are equipped with steel dumping bodies and hydraulic hoists. The trucks cost \$2,926 and \$3,574 respectively.

**Street Flusher.**—Oswego, N. Y. will probably soon have a street flusher. Commissioner of Works, Lindsey, recently visited Ithaca to see the operation of the machine with a view to purchase. The Studebaker machine is of the pneumatic type and is designed particularly to clean brick pavements.

**Rocmac.**—The Rocmac Road Corporation of America, Limited, Thorold, Ontario, Canada, recently signed a contract for one of the largest mileage paving contracts let in Ontario to date. This was for the County Haldimand,  $26\frac{1}{2}$  miles; of this 19 miles is in a straight stretch and  $7\frac{1}{2}$  miles in another straight stretch. The choice of Rocmac was made after three months of investigation, although it was not the cheapest pavement offered.

**Road Machinery.**—Councilmen Barra and Belis, Somerville, N. J., recently made a trip to New York City to examine certain machinery for street work which the borough needs.

**Engine and Crusher.**—The Climax Engine and Crusher Company has offered to sell to the Warren Township committee (N.J.) a crusher and engine like that being used by the State in Sussex county. The price named was \$4,275.

# ADVANCE CONTRACT NEWS

## ADVANCED INFORMATION BIDS ASKED FOR

## CONTRACTS AWARDED ITEMIZED PRICES

To be of value this matter must be printed in the number immediately following its receipt, which makes it impossible for us to verify it all. Our sources of information are believed to be reliable, but we cannot guarantee the correctness of all items. Parties in charge of proposed work are requested to send us information concerning it as early as possible; also correction of any errors discovered.

### BIDS ASKED FOR

STATE	CITY	REC'D UNTIL	NATURE OF WORK	ADDRESS INQUIRIES TO
<b>STREETS AND ROADS</b>				
Neb., Omaha	noon	Apr. 25.	Grading streets	F. Dewey, Co. Clk.
Mich., Crystal Falls	Apr.	25.	Building 5 miles new earth road	County Road Committee
Minn., Owatonna	11 a.m.	Apr. 25.	Constructing state rural highway; cost, \$17,048	M. J. Parcher, Co. Aud.
Ohio, Postoria	noon	Apr. 25.	Paving two streets with brick or asphalt block	C. Latsham, Chief Engr.
Tex., Dallas	Apr.	25.	Paving viaduct and constructing 3 bridges, cost \$125,000	J. M. Preston, City Engr.
W. Va., Moundsville	4 p. m.	Apr. 25.	Curbing and paving with vit. brick	O. B. Bonar, Clerk.
O., North Fairfield	10.30 a.m.	Apr. 25.	Grading, concrete and water-bound macadam road	Trustees Twp.
Ind., Muncie	Apr.	25.	Paving with wood blocks	County Comrs.
Mont., Billings	11 a.m.	Apr. 25.	Grading roads and placing concrete culverts	F. E. Williams, Clk. Co. Bd.
O., Urbana	Apr.	26.	22,500 sq. yds. pavement	Bd. Pub. Service.
Cal., Sacramento	Apr.	27.	Constructing 30 miles state highway	State Comrs.
Minn., Wadena	3 p.m.	Apr. 27.	5 1/2 miles clearing, grading, \$5,792	E. Boss, Aud.
La., Lake Charles	Apr.	27.	Paving about 43 miles highways; bridges and culverts	Co. Police Bureau.
Minn., Minneapolis	11 a.m.	Apr. 27.	Grading and macadamizing 8,700 ft. road	A. P. Erickson, Co. Aud.
N. Y., Elmira	11 a.m.	Apr. 27.	Grading, curbing and paving with vit. block, 21,000 sq. yds.	L. C. Andrews, City Clk.
O., Chillicothe	Noon	Apr. 27.	Grading	R. D. Alexander, Co. Aud.
Tex., Houston	Apr.	27.	Furnishing and delivery gravel	Co. Comrs.
Ore., Dallas	Apr.	27.	Furnishing and delivering 9,000 sq. yds. rock	County Clerk.
Tenn., Knoxville	Apr.	27.	Paving, about 11,724 sq. yds.	Comr. of Streets.
Wis., Superior	1 p.m.	Apr. 27.	Grading and paving several streets	Board Public Works.
Wash., Seattle	2 p.m.	Apr. 27.	Permanent highway	Byron Phelps, Clk. Co. Comrs.
N. J., Asbury Park	8 p.m.	Apr. 27.	4,600 yds. brick paving, bluestone curb and concrete curb	S. H. Calvert, City Clk.
Minn., Ortonville	10 a.m.	Apr. 27.	Five jobs, road construction, \$3,500	A. B. Randall, Aud.
Mont., Lewistown	8 p.m.	Apr. 27.	Preliminary grading and paving	H. L. Fitton, City Clerk.
Ind., South Bend	10 a.m.	Apr. 28.	Paving one avenue	Board Public Works.
Minn., Maple Lake	Apr.	28.	30 adjust. 2-horse drag, 8 slip scrapers and 8 road plows	County Auditor.
Ill., Chicago Heights	8 p.m.	Apr. 28.	57,554 sq. yds. vit. brick pavement, concrete foundation and curb, \$153,423	M. H. McCoy, Engineer.
S. D., Columbia	10 a.m.	Apr. 28.	60,000 sq. yds. street paving, various materials; also concrete or granite curbs	J. McNeal, City Engr.
Minn., Buffalo	Apr.	28.	30 drags, 8 slip scrapers, 8 plows, 16 shovels and metal culverts	J. A. Berg, Co. Aud.
Minn., Cambridge	1 p.m.	Apr. 28.	7 1/2 miles road work	G. C. Smith, Aud.
Minn., Bird Island	1.30 p.m.	Apr.	Austin-Western, etc., road graders, tractor hitch, plows, about 4 dump wagons	J. L. Johnson, Aud.
Conn., Waterbury	8 p.m.	Apr. 28.	Paving with split granite block	R. A. Cairns, City Engr.
Ind., Indianapolis	10 a.m.	Apr. 29.	Culverts, bridges, etc.	Board Co. Comrs.
Wash., Olympia	Apr.	29.	Constructing about 12 miles state highway	W. H. Roy, State Hwy. Bd.
N. J., Passaic	2 p.m.	Apr. 29.	Macadam repair work	Chosen Co. Freeholders.
N. J., Paterson	Apr.	29.	Repairing, macadamizing, etc., several roads	Co. Bd. Chosen Freeholders.
Minn., Bporup	2 p.m.	Apr. 29.	2 1/2 miles road grade, also dragging	J. L. Arends, Clk.
Wis., Chippewa Falls	10 a.m.	Apr. 29.	Grading about 4,500 sq. yds.	P. O. Lokrantz, Co. Comr.
Ill., Chicago	Apr.	30.	4,000 tons refined asphalt	L. E. McGann, Comr. P. Serv.
Ind., Fort Wayne	7.30 p.m.	Apr. 30.	Paving and constructing retaining wall	Bd. Pub. Works.
Ind., Frankfort	2 p.m.	Apr.	Paving with various materials; constructing storm sewer; total cost, \$57,125	R. H. Boynton, City Engr.
Ind., Winchester	Apr.	30.	Grading, draining, paving with crushed stone macadam	County Comrs.
N. C., Rutherford	Apr.	30.	25 miles of public road improvements	Road Consn.
S. D., Sioux Falls	9 a.m.	Apr.	Paving 53,000 sq. yards	W. C. Leyse, City Aud.
N. Y., Albany	1 p.m.	May	Furnishing and delivering bituminous material in different counties	J. M. Carlisle, Co. Aud.
O., Cincinnati	May		Repairing county road	A. Reinhardt, Clerk.
Ore., Carlton	May		Asphalt paving, 1 mile	C. W. Vail, City Recorder.
Minn., Waseca	May		Paving 12 miles, cost \$22,632	City Auditor.
Ill., Elgin	about May		Paving, various materials, about 14,000 sq. yds.	A. Fehrman, Mayor
N. Y., Utica	May		4,500 ft. bituminous macadam road	E. M. Swiget, Supt.
O., Cincinnati	noon, May		Repairing county road	County Commissioners.
N. J., Newton	May		Improving 10 miles highway; cost, \$100,000	H. Snock, Co. Engr.
Wis., Watertown	May		Eight blocks of paving, probably cement	F. S. Webber, City Clk.
D. C., Washington	2 p.m.	May	Supplying asphalt paving block, vit. paving blocks, sewer invert bricks, etc.	District Comms.
Tenn., Sevierville	noon	May	Grading 60 miles; macadamizing 30 miles	Co. Rd. Comrs.
Tex., Dallas	11 a. m.	May	Paving viaduct	County Auditor.
Utah, Ogden City	10 a.m.	May	Furnishing materials and constructing sidewalks	W. Jenkins, City Engr.
Ind., Vernon	11 a. m.	May	Stone road in townships	G. J. Bumhart, Aud.
Ind., Hartford City	May		One township road	County Auditor.
Ala., Florence	May		Constructing 1/2 mile water bound macadam, curb & gut	Lund & Hill, Little Rock, Ark.
Ind., La Porte	10 a.m.	May	Grading, draining and paving number of streets	F. A. Hausheer, Co. Aud.
Cal., San Jose	May		Road improvement	J. G. McMillan, Co. Surv.
Ind., Rising Sun	1 p.m.	May	Grading, draining and paving highway	Co. Comrs.
Ind., Versailles	1 p.m.	May	Grading, draining and paving highway	F. Lockhardt, Co. Aud.
Ind., Greenfield	May		Furnishing and delivering grades of crushed stone	Co. Comrs.
N. D., Beach	8 p.m.	May	Furnishing 600 gal. street sprinkler	M. A. Eagan, City Aud.
S. D., Mitchell	2 p.m.	May	Grading and improving 6 miles	R. A. Zangle, Aud.
N. D., Washburn	2 p.m.	May	20 or more scrapers; about 5 road plows	E. C. Stocker, Aud.
N. C., Rocky Mount	May		40,000 sq. yds. paving, various materials; also 10 miles sewer and gas pipes	Board of Aldermen.
Pa., Harrisburg	10 a.m.	May	Highway work, including pavement, etc., five jobs	E. M. Bigelow, State Hwy. Comr.
Ark., Pine Bluff	May		Improving about 10,500 sq. yds. road	Board Public Imp.
S. C., Charleston	May		Paving, various materials	J. H. Doyle, City Engr.
N. J., Paterson	May		Laying sidewalks for the year	J. E. Taylor, St. Comr.
Ind., Madison	10 a. m.	May	Roads in two townships	County Comrs.
Ind., Rockville	11 a. m.	May	Grading, draining and bridging	County Comrs.
Pa., Harrisburg	10 a. m.	May	Paving in several boroughs and townships	E. M. Bigelow, St. Hwy. Comr.

## BIDS ASKED FOR

STATE	CITY	REC'D UNTIL	NATURE OF WORK	ADDRESS INQUIRIES TO
O., Findlay	1 p.m., May	6.. 31,680 ft. of stone pipe, three jobs.	Co. Comrs.	
Ind., Lafayette	10 a.m., May	6.. 2.01 miles gravel road, 2.49 miles.	Co. Comrs.	
Minn., Hibbing	8 p.m., May	6.. Graders, dump wagons, wheel scrapers, slushers, and metal culverts.	V. J. Benoe, Clerk. G. P. Johnson, City Aud.	
N. D., Northwood	6 p.m., May	6.. Sidewalks and street crossings.	C. H. Brown, Co. Aud.	
Ind., Fort Wayne	May	6.. Grading, draining and paving.	C. K. Nelson, Auditor.	
Ia., Forest City	11 a.m., May	6.. 46,000 cu. yds. grading.	F. M. Kaisersartt, Aud.	
Minn., Northfield	1 p.m., May	6.. Grading, turnpiking, graveling, \$4,113.	S. H. Murray, City Aud.	
N. D., Wahpeton	7 p.m., May	7.. Sidewalks, curbs, gutters, etc., for 1914.	C. Baetz, Chm. Bd. Pub. Wks.	
Wis., Two Rivers	7.30 p.m., May	7.. Grading, curbing, macadamizing various roads.	C. F. Powers, Civ. Engr.	
Ind., Angola	1.30 p.m., May	7.. 12,000 sq. yds. paving, various materials.	Co. Comrs.	
O., Cincinnati	noon, May	8.. Improving pike.	Board Co. Comrs.	
Ind., Hamilton	10 a.m., May	9.. Constructing gravel road.	J. W. Byers, Vil. Clerk.	
O., Columbus	Noon, May	11.. Improving and macadamizing several streets.	Village Clerk.	
O., London	Noon, May	12.. Grading and paving with various materials.	E. J. Smith, Dir. Pub. Ser.	
O., Montpelier	May	12.. 15,000 sq. yds. paving.	J. R. Marker, Comr., Colum-	
O., East Liverpool	noon, May	15.. Paving with brick or paving blocks; eight jobs.	bus.	
O., Coshocton	about May 10	1.. 1/2 miles brick and slag road.	County Comrs.	
Ind., Noblesville	10 a.m., May	15.. Two gravel roads.	W. E. Sykes, Dir. P. S.	
O., Canal Dover	about June	1.. Constructing brick pavement.		

## SEWERAGE

Wis., Racine	10 a.m., Apr.	25.. Sewers in various streets, four jobs.	Bd. Public Works.
O., Kenmore	Apr.	25.. Sanitary sewer with house connections, etc.	Council.
Ill., Alton	Apr.	25.. 13 1/2 miles main sewer and 4 1/2 miles of laterals; \$95,000.	J. E. Schaab, City Engr.
Wis., Chippewa Falls	Apr.	27.. 2,000 ft. vit. pipe sewer.	L. J. Felix, City Clerk.
O., Canal Fulton	noon, Apr.	27.. Constructing sanitary sewer.	J. V. Duggan, Clk.
Mich., Highland Park	Apr.	27.. 19,650 ft. 36 to 54-in. sewers and 36 manholes.	Village Clk.
Minn., Duluth	3 p.m.	27.. County ditch; cost, \$40,507.	O. Halden, Auditor.
Wis., Ripon	4 p.m.	27.. 875 feet sewer.	J. W. Pierce, Clerk.
Mont., Billings	Apr.	27.. 34,100 ft. tile drain.	U. S. Reclam. Serv., Great Falls
Ill., Cicero	8 p.m.	27.. Constructing house drains.	C. Stoffel, Town Clk.
Minn., Bemidji	10 a.m., Apr.	28.. Constructing judicial ditch; cost, \$311,000.	J. L. George, Co. Aud.
Minn., Crookston	10 a.m., Apr.	28.. Constructing ditch; cost, \$11,710.	H. J. Welte, Aud.
N. J., Newark	2 p.m., Apr.	28.. Constructing intercepting sewer.	J. S. Gibson, Clk. Comm.
N. J., Paterson	2 p.m., Apr.	28.. Main intercepting sewer.	J. S. Gibson, Clk., Newark.
Minn., Buffalo	1.30 p.m., Apr.	28.. Corrugated metal culverts for year 1914.	Co. Aud.
Pa., Elwyn	Apr.	28.. Sewage disposal plant and 3,350 ft. 8-inch sewer.	County Comrs.
Mass., Nantucket	2.30 p.m., Apr.	28.. Constructing sewers.	A. Smith, Secy. Sewer Comm.
Conn., Shelton	Apr.	28.. Constructing sewer system.	Borough Board.
Pa., Elwyn	Apr.	29.. Constructing a sewage disposal plant.	Chapman & Farquhar, 874 Broadway, N. Y.
Idaho, Mountain Home	Apr.	30.. Sewer system, cost \$24,725; septic tanks, \$1,500.	O. E. Norell, City Clk.
W. Va., Bluefield	Apr.	31.. Installing 17,000 ft. sanitary sewers.	J. T. Akers, Aud.
Iowa, Shefield	May	1.. Constructing water work and sewer system.	City Clerk.
N. D., Grand Forks	4 p.m., May	4.. Vitrified clay pipe lateral sewers.	C. J. Evanson, City Aud.
Ind., Hammond	10 a.m., May	4.. Sewers in one street.	Bd. Public Works.
N. J., Newark	2 p.m., May	5.. Foundations and connections for pumping station.	J. S. Gibson, Clerk.
O., Canton	May	5.. Constructing sewage disposal plant.	R. W. Platt, Engr., Cleveland
N. J., Ventnor City	May	6.. Intercepting sewer, centrifugal pumps, sewage disposal works, etc.	Common Council.
Ia., Sumner	May	6.. Four miles sewers.	City Clerk.
Ia., Shefield	1 p.m., May	6.. Sanitary sewer.	A. C. Shafer, Town Clerk.
Ont., London	5 p.m., May	7.. Storm and sanitary sewers in various streets.	City Clerk.
Pa., Lebanon	May	11.. Vit. pipe sewers, manholes, flush tanks, etc.	T. R. Crowell, C. E.
N. Y., Brighton	May	12.. Storm and sanitary sewer, disposal plant, etc.	Sewer Comrs.
N. Y., Goshen	1.30 p.m., May	15.. Sewer system and sewage disposal plant.	G. F. Gregg, Vil. Pres.
Wis., Wittenberg	June	1.. Sewer and water works, \$30,000.	A. Johnson, Vil. Pres.

## WATER SUPPLY

Mont., Billings	Apr.	25.. Ingots iron galvanized culverts.	City Clerk.
Fla., Wauchula	1 p.m., Apr.	25.. Constructing water works and sewer systems.	Bond Trustees.
Ill., Chicago	11 a.m., Apr.	25.. Compounded river pump valves for cold water.	L. E. McGann, Comr. P. S.
Cal., Porterville	8 p.m., Apr.	27.. Constructing concrete water pit, installing pump and laying pipe.	E. F. Halpert, City Clerk.
O., Cincinnati	noon, Apr.	27.. Furnishing c.-i. pipe, valves, special castings, etc.	P. Fosdick, Dir. Pub. Serv.
N. Y., Brooklyn	2 p.m., Apr.	27.. Furnishing and laying water mains and appurts, etc.	W. Williams, Comr. Gas, Water Sup., etc.
Mo., Charleston	Apr.	27.. Constructing two 10-inch wells.	City Clerk.
Minn., Deerwood	8 p.m., Apr.	27.. Constructing water works and sewer system, cost \$25,000.	City Clerk.
Ia., Hammond	Apr.	27.. C. i. pipe, hydrants, specials, etc.	J. H. Rathfon, Controller.
Pa., Philadelphia	Apr.	28.. Pumping machinery, boilers, tanks, etc.	M. L. Cook, Dir. P. W.
R. I., Melville Station	10 a.m., Apr.	28.. C.-i. pipe, fittings, gate valves, etc.	Navy Dept., Wash., D. C.
Tenn., Tiptonville	1 p.m., Apr.	28.. Three miles water pipe, settling basin, tank, tower, etc.	C. W. Haynes, Mayor.
N. J., Moorestown	Apr.	28.. Furnishing c.-i. pipe, constructing deferrization plant, etc.	Township Com., Chester Twp.
Ill., Chicago	Apr.	28.. 50 5/8-in., 100 3/4-in., 250 1-in., 56 1/2-in., and 200 2-in. disc water meters.	L. E. McGann, Comr. P. Wks.
Wis., Monroe	Apr.	29.. Steam-driven 800-gallons per minute pump.	Board Water Comrs.
O., Cleveland	Noon, Apr.	29.. Lead covered cable.	A. R. Callow, Comr. Pur. & Sup.
N. J., Jersey City	Apr.	30.. Furnishing and delivering c.-i. pipe.	M. I. Fagen, City Clk.
D. C., Washington	Apr.	30.. 9,200 ft. c.-i. pipe, gate valves, etc.	Isthmian Canal Comm.
Ont., Brantford	Apr.	30.. Two 4-million gallons turbine pumps and two motors, etc.	Sec.-Treas., Bd. Water Comrs.
Ia., Shefield	May	1.. Constructing water works and sewer system.	City Clerk.
O., Wooster	about May	1.. Water works improvement.	R. H. Hunter, City Engr.
Ala., Clinton	May	1.. Installing water works system.	City Clerk.
S. D., Berresford	6 p.m., May	4.. Reinforced concrete reservoir; capacity, 100,000 gallons.	City Auditor.
S. D., Parker	May	4.. Furnishing and installing c.-i. mains, hydrants, cost \$7,000.	Water Comrs.
N. J., Freehold	8 p.m., May	4.. Reinforced concrete receiving tank for water plant.	M. J. Boyd.
N. D., Valley City	8 p.m., May	4.. Building water main, 886 ft.	J. Desordis, Sec.-Treas.
Man., St. Vital	8 p.m., May	6.. Water pipe, valves and hydrants.	Dist. Comrs.
D. C., Washington	May	6.. 350 low pressure hydrants.	A. C. Shafer, City Clk.
Ia., Shefield	May	6.. Water works and sewer system, cost \$28,000.	P. J. Stephans, Sec.-Treas.
Sask., Estevan	8 p.m., May	9.. Laying water main and constructing sewers.	City Comrs.
La., Hammond	2 p.m., May	9.. Improvements to water system.	C. W. Heinmiller, City Engr.
N. D., Carrington	May 10	10.. 10,450 ft. 6-in. water meters and 17-in. fire hydrants.	T. R. Crowell, City Eng.
Pa., Lebanon	5 p.m., May	11.. 55,000 ft. vit. pipe sewers.	

## LIGHTING AND POWER

Ill., Chicago	11 a.m., Apr.	25.. 30,000 ft. rubber-covered cable, about 50 fire alarm boxes.	R. Palmer, Comr. Gas & Elec.
N. Y., Binghamton	2.30 p.m., Apr.	27.. Reconstructing electric lighting system, steam and exhaust piping.	State Hosp. Coms., Albany.
N. Y., Collins	2.30 p.m., Apr.	27.. Additional boiler capacity and underground steam connections.	State Hosp. Coms., Albany.
Ill., Urbana	2 p.m., Apr.	27.. Electric wiring, heating, etc., of chemical laboratory.	Trustees Univ. of Ill.
S. D., Aberdeen	Apr.	27.. Electric light fixtures.	Co. Aud.
Del., Wilmington	noon, Apr.	28.. Incandescent street lighting for five years.	L. V. Christy, Secretary.
Mass., Holyoke	2 p.m., Apr.	28.. Electric meters and gas meters.	Gas & Elec. Dept.
D. C., Washington	Apr.	28.. Furnishing 5 ammeters and 6 galvenometers.	Pur. Agt. Dist. Govt.

## BIDS ASKED FOR

STATE	CITY	REC'D UNTIL	NATURE OF WORK	ADDRESS INQUIRIES TO
Mich., Monroe		Apr. 28	Electric wiring in school building	Board of Education.
N. J., Jersey City		Apr. 30	Refinishing electric light fixtures	M. I. Fagen, City Clerk.
S. D., Elk Point	2:30 p.m.	Apr. 30	Electric lighting system	A. Smythe, City Aud.
O., Cleveland		May 4	Installing heating and ventilating apparatus in 3 schools	Clk., Board Education.
Mont., Helena		May 4	Installing ornamental lighting system, 391 posts	Wm. Jordan, Jr., C. Clerk.
N. D., Grand Forks		May 7	Electric light fixtures	County Auditor.
Pa., Philadelphia		May 7	Contract for electric street lighting	Dir. Cooke.
B. C., Fernie		May 7	Complete tungsten street lighting system	J. E. Finn, Sup. Lt. & Power.
Mont., Lewistown	8 p.m.	May 11	Installing street lighting system	H. L. Fitton, City Clk.
Mich., Ionia		May 12	Electric wiring in building	E. A. Boyd, Lansing.
O., London	Noon	May 12	Equipment for cluster lights	J. W. Byers, Village Clk.

## FIRE EQUIPMENT

D. C., Washington	Apr. 27	Furnishing and installing new boiler and rebuilding engine	Purchasing Officer.
N. Y., Brooklyn	10 a.m.	Apr. 28 Unlined linen hose	Navy Dept., Wash., D. C.
Wash., Puget Sound	10 a.m.	May 5 Quantity of linen fire hose	Navy Dept., Washington, D. C.

## BRIDGES

Minn., Cambridge	1 p.m.	Apr. 27	Concrete bridge with two 30-ft. spans	G. C. Smith, Co. Aud.
Minn., Buffalo	1:30 p.m.	Apr. 28	Corrugated metal culverts	J. Berg.
Ga., Montezuma		Apr. 28	Reinforced concrete bridge, 90-ft. span	City Clerk.
Pa., Churchtown		Apr. 29	50-foot reinforced girder span bridge	County Comrs.
Ont., Cayuga		May 2	Concrete arch bridge	Township Council.
Tex., Houston	10 a.m.	May 4	Constructing reinforced concrete bridge, 150 ft. long	H. L. Washburn, Co. Aud.

## MISCELLANEOUS

O., Lorain	noon	Apr. 27	Constructing subway	L. B. Johnson, Clerk.
Ill., Des Plaines		Apr. 27	Erecting two wings to school, cost \$50,000	Board Education.
W. Va., Wheeling		Apr. 28	700 bbls. American Portland cement	Maj. J. P. Jersey, Corps. Engrs., U. S. A.
Wash., Puget Sound	10 a.m.	Apr. 28	Steel bolts, brass pipe fittings, reducing valves, etc.	J. T. Cowie, Paymaster, U. S. N. Washington.
Pa., Wanamie	7 p.m.	Apr. 28	Combination street sprinkler and sweeper	W. O. Davis, Secy.
Ill., Chicago	11 a.m.	Apr. 28	Delivering 5,000 gals. fuel oil	G. E. Young, Comr. of Health.
Cal., San Francisco		Apr. 29	Marble work in City Hall, cost about \$400,000	Board Pub. Works.
Ill., Chicago	11 a.m.	Apr. 30	Constructing two freight and passenger buildings	E. C. Shankland, Harbor and Subway Comm.
Mo., Richmond	May 1	1	Constructing court house; cost, \$100,000	J. J. Pardue, Co. Treas.
Ark., Little Rock	3 p.m.	May 1	Alterations in post office and court house	O. Wenderoth, Sup. Architect, Washington, D. C.
O., Cleveland		May 11	Retaining wall	Board Education.
Cal., Mare Island	10 a.m.	May 12	Supplying multiple leaders, tubes, boilers, etc.	Navy Dept., Wash., D. C.
O., Akron		May 14	Garbage reduction equipment	Director Public Service.
Conn., Waterbury	4:30 p.m.	May 29	Constructing municipal building	City Hall Comm.
N. C., Rocky Mount	3 p.m.	May 29	Constructing complete post office	Supv. Arch., Wash., D. C.

## STREETS AND ROADS

**Gadsden, Ala.**—Question of issuing \$100,000 bonds for street improvement is being discussed.

**Pine Bluff, Ark.**—Bids will be received until 2 p. m., May 5, for Paving District No. 31, 6,800 yds. asphaltic concrete pavement, 1,300 ft. combined curb and gutter; Paving District No. 32, 10,500 yds. repaving with brick, wood block, or asphaltic concrete. Wm. J. Parkes is Cons. Engr., Citizens Bank Bldg., Pine Bluff.

**Saltins, Cal.**—At call of Supervisors of Monterey County, meeting to consider ways and means for purchase of State highway bonds for Monterey County will be held in San Francisco on April 17. Bonds will cost approximately \$825,000. Monterey County will have longest stretch of highway road of any county between San Diego and San Francisco.

**Stockton, Cal.**—County Board of Supervisors has granted petition for road improvements on Jack Tone road from Ortman's Corner to Tokay Colony school house.

**Oakville, Conn.**—Bids will shortly be advertised for improvements to be made on road between Oakville and Waterbury.

**Denver, Colo.**—Repairs to streets will shortly be made.

**De Land, Fla.**—Bond issue of \$200,000 is being discussed for street paving, storm sewerage and city buildings.

**Orlando, Fla.**—City Commissioners have rejected bids for paving brick. County Commissioners are also advertising for bids for paving and graveling many miles of country roads.

**Atlanta, Ga.**—County Comrs. have voted to pave about 17 streets, including Church, Main, Whitehall Sts.

**Macon, Ga.**—City Council will pave Vineville Ave. with concrete at cost of about \$5,000.

**Waukegan, Ill.**—Board of local improvements has passed resolution for paving of Washington St. with brick with 6-in. concrete base.

**Streator, Ill.**—Members of local board of improvements are advertising for bids for paving of North Bloomington St. and at end of ten days it is expected that bids will be opened and contract will be let.

**Angola, Ind.**—Bids will be received until 1:30 p. m., May 7, for paving West Maumee St. with reinforced concrete.

brick, wood, block, asphalt block or treated macadam, about 12,000 sq. yds. R. Hirst is City Clerk.

**Cumberland, Ind.**—Plans to build three miles of concrete road on Bedford Pike will be taken up and discussed at meeting of Road Directors.

**Fort Wayne, Ind.**—Board of Works has instituted paving campaign for summer by adopting resolutions for 16 street improvement jobs. These pavements will cost city approximately \$40,000, figured on actual costs of real street paving work.

**Frankfort, Ind.**—Bids will be received for improvement of Armstrong St. until 2 p. m., April 30. Work consists of 14,460 sq. yds. brick, sheet asphalt, bituminous or wood block wearing surface on 5-in. concrete foundation with necessary cement sidewalks and curbs, and about 3,125 ft. storm sewers. R. H. Boynton is City Engr.

**Noblesville, Ind.**—Two issues of Washington Township, Hamilton County, road bonds have been sold to Citizens' State Bank, of this city.

**South Bend, Ind.**—Resolution for paving of Pennsylvania Ave., from Michigan to Miami St., has been adopted by board of works.

**Sugar Creek, Ind.**—Bonds in sum of \$3,260 for building of Strickler road, in this township, have been sold to J. F. Wild & Co., of Indianapolis.

**Ames, Ia.**—Permanent paving of country roads will receive considerable attention this year, according to H. C. Beard, member of highway commission. Among counties which have decided upon permanent paving are: Des Moines county, cement paving between Burlington and West Burlington; Cerro Gordo county, continuation of cement paving on road between Mason City and Clear Lake; Wapello county, macadamizing of sections of roads from Ottumwa to Oskaloosa; Ottumwa to Eddyville; Ottumwa to Weldon; Page county, cement paving from Clarinda to the chautauqua grounds, to be continued to the river by the county officials. There are eight counties which are discussing permanent road work, but have made no definite arrangements, and have not yet submitted plans for approval to highway commission.

**Atchison, Kan.**—Resolution has been passed by the council for paving and re-

curbing of Commercial St. from 9th to 11th.

**Leavenworth, Kan.**—City Engineer Franks has prepared list of streets, curbed and paved, that should be repaired during the summer.

**Henderson, Ky.**—Legislature has passed bill permitting cities of third class to oil streets and assess cost against abutting property owners, one-third to be paid by owners on one side of city, one-third by owners on other side, and one-third by city. City of Henderson expects to begin immediately oiling of all principal streets. Purchase of oil storage tanks and distributing wagons has been referred to L. P. Hite, Supt. of Municipal Electric Light Station.

**Baton Rouge, La.**—Election for issuance of \$186,000 of bonds for building of good roads in Third Ward, comprising second good road district of East Baton Rouge, has been unanimously carried.

**Hagerstown, Md.**—Streets of Hagerstown will soon be repaired, oiled and put in proper condition for summer traffic. Commissioner Monath has made motion to have an 8,000-gallon tank of Tarvia B oil ordered and applied just as soon as all depressions in streets have been filled with crushed stone.

**Lowell, Mass.**—Council has passed loan order of \$100,000 for street paving and \$30,000 for macadamizing.

**Springfield, Mass.**—Bd. of Supervs. will pave Broadway, State St. and Belmont Ave., at cost of \$200,000.

**Coloma, Mich.**—Township Board of Waterlyet has prepared petition for Board of Supervisors and County Road Commissioners asking that proposed state trunk line through that district be built this year.

**Magnolia, Miss.**—Good road bonds in sum of \$150,000 have been awarded to Provident Savings Bank & Trust Co., of Cincinnati.

**Harlowton, Mont.**—City Council has voted \$13,000 for concrete sidewalks.

**Franklin, N. H.**—Improvement of various streets is being planned.

**Camden, N. J.**—Finance Committee of City Council of city of Camden will receive sealed proposals at 8 o'clock p. m., April 27, 1914, for purchase of \$125,000 Paving Bonds.

**Cranford, N. J.**—Improvement of various streets is being planned.

**Elizabeth, N. J.**—Street Committee of City Council has decided to give notice of intention to pave Stiles St., from Westfield Ave. to Magic St., with brick.

**Linden, N. J.**—A motion to hold special election on \$100,000 bond issue for improvement of streets throughout township has been referred to road committee.

**Linden, N. J.**—Four ordinances providing for paving of streets have been passed on first and second reading at meeting of Borough Council. Streets, which are to be paved with macadam 9 ft. wide and 8 ins. deep, are: Price St., between Wood Ave. and Blancke St.; Lumber St., between Blancke St. and Wood Ave.; Hussar St., from Blancke St. to borough line, and Curtis St., from Wood Ave. to borough line.

**Trenton, N. J.**—Road and Bridge Committee of Board of Freeholders is inspecting thoroughfares and bridges of county to designate contemplated improvements.

**Auburn, N. Y.**—Board of Supervisors has decided by vote of 18 to 13 to establish county system of highways at special session. It provides that twenty-five miles of waterbound macadam highways shall be constructed each year for five years at cost per mile not to exceed \$2,500.

**Auburn, N. Y.**—Effort will be made this year by County Superintendent of Highways J. Charles Dayton to persuade towns to increase their road building equipment.

**Binghamton, N. Y.**—Taxpayers of city will be called upon shortly to decide whether bonds to amount of \$25,000 shall be issued for paving purposes this year.

**Binghamton, N. Y.**—Bids have been opened for construction of pavement on Prospect Ave. from Henry to Eldredge Sts. Bids submitted were: Tyne & Willey—Wyckoff wood block, \$2.86; Foster brick, \$2.25; Bessemer brick, \$2.30; Metropolitan brick, \$2.38; Porter brick, \$2.34; Toronto brick, \$2.33; Mack brick, \$2.42; One course plain concrete pavement, \$1.55; two course plain concrete pavement, \$1.65; one course reinforced concrete, \$1.67; two course reinforced concrete, \$1.77. A. D. Osborne—Jennison Wright lug block, \$2.72; compressed wood block, \$2.51; Porter brick, \$2.17; Toronto brick, \$2.17; Mack brick, \$2.20; Clearfield brick, \$2.12; American brick, \$2.17; Pennsylvania Clay Co., \$2.13; Binghamton paving brick, \$2.04. One course plain concrete, \$1.38; two course plain concrete, \$1.41; one course reinforced concrete, \$1.43; two course reinforced concrete, \$1.46; one course plain concrete with bituminous top, \$1.43; two course plain concrete with bituminous top, \$1.45; one course reinforced concrete with bituminous top, \$1.48; two course reinforced concrete with bituminous top, \$1.53. Takach & Chappelle—Binghamton paving brick, \$2.08; one course plain concrete, \$1.42; two course plain concrete, \$1.45; one course reinforced concrete, \$1.55; two course reinforced concrete, \$1.58; one course plain concrete with bituminous top, \$1.49; two course plain concrete with bituminous top, \$1.52; one course reinforced concrete with bituminous top, \$1.62; two course reinforced concrete with bituminous top, \$1.65. Warren Bros. Co., of New York—Bitulithic pavement, \$2.30 a yd. Action on the bids was deferred for one week. A. D. Osborne apparently is the lowest bidder on all materials.

**Canastota, N. Y.**—Lenox Town Board has authorized Town Highway Superintendent E. G. Watkins to improve, with crushed stone, highway from Seneca turnpike to Lenox Rural Cemetery.

**Massena, N. Y.**—Village paving bonds to amount of \$49,250 have been sold to Massena Banking Co., of this village.

**Saratoga Springs, N. Y.**—Resolution has been adopted urging Governor Glynn to sign \$100,000 appropriation for new bridge between Rexford Flats and Crescent.

**Saratoga Springs, N. Y.**—Board of Supervisors has authorized construction of Round Lake-Moltsa highway, and has appropriated \$5,200 as county's share.

**Schenectady, N. Y.**—See "Water Supply."

**Syracuse, N. Y.**—Plans and specifications prepared by State Highway Department for sections of two state routes leading from city have been approved by County Superintendent of Highways Frank E. Bogardus and returned to department. One is for improvement of section of old Cicero Plank road from Wolf St. to Cicero village, part of Syracuse-Watertown state route, completing route in this county. Other is for section of old Liverpool Plank road inside city, running through Park St., part of Syracuse-Oswego state route. Latter road

will be but 16 ft. wide and made by concrete.

**Statesville, N. C.**—Thirty thousand dollars of 30-year 5 per cent. street improvement bonds have been sold by the Board of Aldermen to Cutter, May & Co., of Chicago.

**Eaton, O.**—Estimates for improvement of Main and North Cherry Sts. have been submitted to City Council by Engineer Reid, and gave estimated cost for brick, asphalt and reinforced concrete. Estimates are: Main St., brick, \$47,296.50; asphalt, \$45,194.75; reinforced concrete, \$37,772.15. North Cherry St., brick, \$25,-531.25; asphalt, \$24,229.40; reinforced concrete, \$18,484.16; bituminous concrete, \$16,261.10.

**Springfield, O.**—Board of control and streets and alleys committee of council have agreed upon brick as paving material to be used on all streets to be paved with exception of Scioto St., which will be paved with asphalt.

**Urbana, O.**—Resolution has been adopted accepting and approving sale of \$16,500 worth of bonds for city's share of paving. Hayden, Miller & Co., of Cleveland, was successful bidder.

**Salem, Ore.**—Twelve roads in this county will be improved should bond election for \$850,000 be carried on May 15, according to order issued by County Court calling election for that date. Roads upon which money is to be expended and minimum amount for each are: Silverton-Salem road, \$80,000; Hubbard-St. Paul road, \$80,000; Silverton-Woodburn road, \$80,000; Salem-Macleay-Whitaker road, \$45,000; Jefferson-Turner road, \$40,000; Praetum-Salem road, \$45,000; Stayton-Turner road, \$65,000; Halls Ferry-Salem road, \$10,000; Salem-Oregon City road, \$300,000; Salem-Wheatland road, \$40,000; Jackson Hill, \$10,000; Salem-Rosedale-Buena Vista road, \$55,000.

**Silverton, Ore.**—At adjourned meeting of City Council ordinance authorizing issuance of \$43,750 10-year 6 per cent. street improvement bonds was adopted.

**Beaver, Pa.**—Ordinance authorizing bond issue for purpose of curbing and paving Beaver, Pennsylvania and Ohio Sts. from 6th to 8th Sts., has passed first reading at meeting of Midland borough council.

**Erie, Pa.**—Bids will be readvertised for paving work.

**Harrisburg, Pa.**—The first highway construction in state for 1914 will be started next month, when bids will be opened at State Highway Department of 26,925 ft. of road to be built under state aid plan, whereby state pays half cost of construction and remainder is divided between county and borough township benefited. Roads to be built are in seven sections, all but one being in boroughs as follows: Curwensville, Galetton, Blairsville, Oakland, Turtle Creek and Clearfield. Practically every one of the contracts will connect with existing improved roads. Bids for about 30,000 additional feet of highway to be improved under state aid plan are to be asked soon.

**Hazleton, Pa.**—The first highway construction in state for 1914 will be started next month when bids will be opened at State Highway Department of 26,925 ft. of road to be built under state aid plan whereby state pays half cost of construction and remainder is divided between county and borough benefited. Roads to be built are in 7 sections, all but one being in boroughs as follows: Curwensville, Galetton, Blairsville, Oakland, Turtle Creek and Clearfield. Bids for about 30,000 additional feet of highway to be improved under state aid plan are to be asked soon.

**New Castle, Pa.**—Widening of South Mill St. is being considered.

**New Castle, Pa.**—Resolution has been adopted for grading and paving of South St. County Line St. and Marshall St.

**Reading, Pa.**—Bill to increase indebtedness of city \$175,000 for street paving has been introduced in Council.

**Scranton, Pa.**—Ordinances have been passed for grading, paving and curbing of various streets. E. Kelly is City Clk.

**Wilkes-Barre, Pa.**—A delegation of citizens of Duryea Borough, headed by burgess, has petitioned County Commissioners that county pay \$20,000 of estimate cost of \$70,000 for building one and one-tenth mile of road connecting Luzerne and Lackawanna Counties. Streets are to be paved with brick.

**Woonsocket, R. I.**—Sum of \$112,623 is asked in resolution introduced by Councilman Frank P. O'Donnell, which provides for paving of North Main St. and number of other highways in that vicinity. Of this sum \$52,000 is needed for North Main St.

**Allendale, S. C.**—Bonds in sum of \$30,000 for good roads have been voted in

townships of Allendale, Bullpond and Baldock.

**Greenwood, S. C.**—City Council has voted to do some additional street paving. Maxwell Ave. will be paved from where paving now stops to the Seaboard depot. Bitulithic paving will be used.

**Sevierville, Tenn.**—Sixty miles of pike will be constructed in Sevier County within next few months at expenditure of \$180,000, proceeds of pike bonds which have been issued. Surveys are now being made for road work and when this work is completed this county will show up well from good roads standpoint.

**Austin, Tex.**—City Engineer's department is preparing plans and specifications for paving on East Third St.

**Corsicana, Tex.**—Road bonds in sum of \$400,000 have been sold.

**Dallas, Tex.**—Report on cost of paving west side of Munger Blvd. from Rieger Ave. to Junius St. has been filed with City Commissioners by City Engineer J. M. Preston. Work will cost \$7,463.02.

**Fort Worth, Tex.**—Bids for constructing one and one-half miles of Sublett Webb Rd. have been opened by County Commissioners, but no award made. Bids follow: Winfrey & Wright, \$1,335.94; F. R. Briggs, \$1,318.30; R. A. Young, \$1,275.70; W. F. Elliott, \$1,484.58; W. G. Oglesby, \$1,292.24; Dougherty & Boles, \$1,525.79.

**Hillsboro, Tex.**—Recommendations of Engineer Cooper that work of building permanent highways in precinct No. 1 with money secured from recent \$250,000 bond issue be let by contract has been adopted by special road commissioners here.

**Houston, Tex.**—Council has appropriated \$26,372.90 for street, sewer and gutter construction.

**Paris, Tex.**—City Council has awarded contract for paving of 32d St., from Lamar Ave. to Clarksville St. with concrete curb and gutter and gravel roadway. Dallas gravel is to be used.

**San Antonio, Tex.**—Contractors will be invited by City Council to submit bids for paving of several miles of streets in business district and residence streets which are known as main arteries. Bids will be called for in resolution which will provide that creosoted wood blocks be sold to contractors at \$1.38 a square yard for 3-inch blocks and \$1.60 a square yard for 3½-inch blocks; sand at 67 cents a cubic yard, and cement at \$1.60 a barrel.

**Timpton, Tex.**—Bond issue has been voted for construction of sidewalks.

**Victoria, Tex.**—Citizens have voted \$125,000 in bonds for road improvements.

**Yoakum, Tex.**—Bonds in sum of \$40,000 for street improvements have been sold.

**Lynchburg, Va.**—City is about ready to complete improvement on Norfolk Ave., which is still in need of top dressing of tarvia to call contract complete.

**Norfolk, Va.**—Contracts for laying approximately 25,000 sq. ft. of smooth paving and 8,000 lin. ft. of curbing in River-view section of old Seventh ward, have been considered by Local Board of Improvement. Contract will not be awarded until later. Louis Lawson was low bidder on paving. Only bid for curbing was that of J. U. Addenbrook's Sons. Bids were as follows: Louis Lawson, \$38,984; Continental Public Works Company, \$39,567; F. J. McGuire, \$39,692.50; Barber Asphalt Paving Company, \$45,817; Atlantic Bitulithic Company, \$48,483; J. U. Addenbrook's Sons, 47 cents per lin. ft.

**Bellair, W. Va.**—Seasongood, Mayer Company, of Cincinnati, and E. H. Roland & Company of Chicago, have been awarded bonds for improvements of National Road. Commissioners will ask for bids on this proposed improvement in few weeks, and actual work will probably be started by middle of May.

**Sumner, Wash.**—Specifications for contracts to be let for one and a half miles of street paving will be presented to council. No particular kind of paving will be asked for in bids, cost and durability being determining points which council will consider.

**Superior, Wis.**—Construction of this end of long-sought Douglas-Bayfield counties highway between Superior and Washburn, has been authorized by Douglas county board. Route will be along Northern Pacific railroad's Ashland line. Completed highway will cost about \$100,000 and will be first in system of trunk roads to adjoining counties.

**Superior, Wis.**—Bids will be readvertised for paving of Tower Ave., between 16th and 28th Sts.

#### CONTRACTS AWARDED.

**Anniston, Ala.**—Goodrich & Crinkley, of this city, road contractors, have been awarded contract for work to be done

in Marshall county, where \$165,000 in bonds have been issued for road work.

**Anniston, Ala.**—To Goodrich & Crinkley, of this city, road contractors, contract for work to be done in Marshall County, where \$165,000 in bonds have been issued for road work.

**Guntersville, Ala.**—By County Comrs., for grading and drainage approximately 20½ miles of public road and paving 5 miles with chert and gravel and 4 miles with waterbound macadam as follows: Goodrich & Crinkley, Anniston, \$17,000; W. A. Hicks & Son, Millport, \$12,000; R. G. Hill & Co., Birmingham, \$15,000. T. D. Kemp is County Engr.

**Santa, Ana, Cal.**—On report of Highway Commission, contract has been let to Star Cement Co., of Riverside, for paving 3.5 miles at Buena Park. Price is \$17,219.44.

**Tampa, Fla.**—By Board of Public Works, to Edwards Construction Co., for laying of brick pavement on number of streets, total amount of contracts being about \$55,000.

**Bluffton, Ind.**—Five gravel roads have been sold by County Commissioners. Roads disposed of were as follows: C. W. Conner road, to Allison Fulton for \$6,150; V. S. Pease road to Marcellus Alexander for \$8,324; C. D. Gallmeyer road to Harley Somers for \$6,821.90; W. M. Beck road to Harley Somers for \$11,684.90; Adam Johnston road to Gabriel Peck for \$3,540.

**Boonville, Ind.**—Contract for construction of six rock roads in Ohio Township, Warrick County, has been let to R. W. Martin, of Evansville, for \$50,393.96. There were seven bids in all.

**Kokomo, Ind.**—J. H. Watson & Son, the Kokomo contractors, have been awarded contract for Greentown road at price of \$21,074. Metropolitan brick is to be used in its construction.

**Kokomo, Ind.**—Thirteen road contracts have been let by board of county commissioners. Contracts let are as follows: Dempsey Rd., Center township, Fred Davenport, \$13,900; Barber Rd., Ervin township, Ferrer & Sines, Frankfort, \$6,319; McCoy Rd., Union township, M. N. Turley, \$5,361; Dolan Rd., Center township, E. L. Huffman, \$6,294; Ulrick Rd., Center township, J. H. Watson & Son, \$5,462; Malaby Rd. (asphalt) Center township, J. H. Watson & Son, \$22,885; Carothers Rd., Center township, Nees & Seaman, \$9,585; McGlynn Rd. (North Washington St.), Center township, J. H. Watson & Son, \$16,543; Robinson Rd., Center township, J. H. Watson & Son, \$5,100; Spangle Rd., Center township, Chaffin & Addington, \$8,978; Ritchey Rd., Center township, W. M. Mahoney, \$10,333; Freyer Rd., Center township, W. M. Mahoney, \$7,775; Barlow Rd., Center township, Wm. Mahoney, \$1,000. While the Greentown road has not been let, J. H. Watson & Son are the lowest bidders and the job will doubtless go to them. Their bid is \$21,074 for Metropolitan block, which is the material to be used.

**Marion, Ind.**—There were seven bids for Kaiser Rd., in Marion township. Contract was awarded to C. W. North on his bid of \$13,489. Engineer's estimate for 13,528 ft. of road was \$17,027.20.

**Winamac, Ind.**—By Co. Comrs. for constructing M. M. Mathias gravel road to F. W. Williams, Winamac, at \$7,413. S. E. Paul is Co. Surveyor.

**Winchester, Ky.**—Fiscal Court has let three road contracts as follows: Thirty rods of stone work between Boonesboro and Comb's Ferry to Ealler Dykes at \$9 a rod; Pike from Howard's Creek bridge to mouth of Red River to N. B. Barrow at \$8.50 per rod for stone work, and \$5 a rod for slate and gravel; White and Conkwright pike to Jesse Thompson at \$9 a rod for stone work, and \$6 per rod for gravel.

**Opelousas, La.**—Frank Dimmick, president of Police Jury, and Highway Engineer Roberts, have closed contract with Rogers' Gravel Co., of Lecompte, La., for 30,000 yds. of gravel to be used for permanent roads.

**Shreveport, La.**—For sum of \$9,474.50 City Council has contracted with Southern Bitulithic Co. for purchase of brand new paving plant, with which old street paving will be repaired and maintained. Council has also purchased materials for resurfacing and protecting paved streets.

**Shreveport, La.**—Contracts have been awarded by Police Jury for three 5-mile extensions of model highways out of Shreveport. Richie & Co., of Camden, Ark., will build Hart's Island extension, toward Red River Parish line, for \$15,971. Gaynor & Co., of Jackson, Miss., will build Mooringport extension, on Shreveport oil field route, for \$23,284.50. Healy Construction Co. was given contract to build extension of Greenwood road for \$21,-

097.75. Extension of Greenwood road will complete that road to Texas State line. Extension on other two roads will lengthen those highways to 15 miles each, their construction having been begun two years ago at rate of 5 miles a year. State Highway Department is cooperating in building of 5-mile extensions on Shreveport-Mansfield and Arkansas State line routes.

**Fall River, Mass.**—Contract for laying granolithic sidewalks for year has been awarded to Beattie & Cornell at lowest bid of \$1,387 per sq. yd. Appropriation of \$32,000 is available for this work; \$20,000 from loan and \$12,000 departmental revenue.

**Alma, Mich.**—For paving, to McDermott & Cooper, of Grand Rapids, for two course concrete pvt., at \$14,412.

**Duluth, Minn.**—Contract for construction of State Rural Highway No. 4 has been awarded to E. A. Dahl & Co. at \$126,772.

**Booneville, Miss.**—By Highway Comrs., Superv. Dist. No. 7, for improving about 3.6 miles of road, with novaculite, gravel or crushed stone, to Caruthers & Bolton, Booneville, at \$18,013. Xaxier A. Kramer is Engr., Magnolia.

**Forest, Miss.**—Supervisors of this county have let contract for building seven miles of road to Boyde & Bradshaw, of Columbia, Miss., for \$5,613.35. Road is to extend north to Harperville. Contract is to be completed in ninety days.

**New York City, N. Y.**—Contract for construction of Section No. 1 of Route No. 33 has been awarded to Booth & Flinn, Ltd., at \$2,059,182.

**Syracuse, N. Y.**—For paving of West Taylor St. from South Salina St. to Midland Ave., lowest bid was received from Warner-Quinlan Asphalt Co. at rate of \$1.70 a square yard under five-year guaranty and \$1.77 under ten-year guaranty. Same company bid \$1.50 a square yard for Topeka mixture pavement. This is under new specifications, which provide for 6 in. of concrete and top course of bituminous materials 2 in. thick. Bids on all kinds of materials were generally low. Lowest for brick was by Warner-Quinlan Asphalt Co., at \$2 a square yard. Bids for brick are all under two-year guaranty, and stone curbing was specified in all proposals. Bids were as follows: Guaranty of two years on brick and ten years on asphalt and other pavements: C. T. Hookway Construction Co., brick, \$15,402, and asphalt, \$14,227; F. J. Baker, brick, \$16,533.30, and asphalt, \$15,065.50; Guy B. Dickison, brick, \$14,613, and asphalt, \$13,128; F. S. Sposato, brick, \$16,005.50; bituminous concrete A, \$15,505.50; bituminous concrete B, \$15,280.50, and Topeka mixture, \$15,505.50; John Young, brick, \$15,280.50, and asphalt, \$13,643.50; Warner-Quinlan Asphalt Co., brick, \$13,674.25, and asphalt, \$12,527.25. Guaranty of two years on brick and of five years on asphalt and other pavements: C. T. Hookway Construction Co., asphalt, \$13,727; G. B. Dickison, asphalt, \$12,903, and Topeka mixture, \$12,768; Sullivan Construction Co., brick, \$14,732; F. S. Sposato, bituminous pavement, \$15,364.50; bituminous concrete, \$14,414.50, and Topeka mixture, \$14,414.50; John Young, asphalt, \$13,508.50; Warner-Quinlan Asphalt Co., asphalt, \$12,212.25, and Topeka mixture, \$11,270.25.

**Troy, N. Y.**—By Board of Contract & Supply to J. W. Davitt of this city for paving of Tibbits Ave., at \$32,000, and People's Ave., at \$19,000. Pavement selected is bitulithic at \$2.64 per cu. yd., including excavation and concrete foundation. A. E. Roche is City Engr.

**Ohio.**—State Highway Comr., Columbus, for road work as follows: Delaware County—Trenton Road, 1.9 miles, to Roof & Burton, Sunbury, \$10,986. Fulton County—Archbold-Fayette Road, 1 mile, to R. C. Roach, Waterville, \$7,900. Fulton County—Archbold-Fayette, 1 mile, to R. C. Roach, Waterville, \$7,470. Lawrence County—Sect. 2, Turnpike, 3.27 miles, to John M. Capper, Kitts Hill, Lawrence County, \$12,990. Summit County—Kent Road, brick, 1.17 miles, to J. C. Devine, Alliance, O., \$25,240. Scioto County—Ohio River Road, brick, 1.45 miles, to Kelley Brothers, Portsmouth, \$28,925. Wayne County—Akron-Wooster Road, brick, 1.5 miles to Peters & Baird, Wadsworth, \$23,459.

**Sandusky, O.**—To Standard Oil Co. contract for furnishing oil to be used on city's streets for year, by board of control at 5½ cents per gallon. City will purchase approximately 75,000 gallons of oil for use on the streets this year.

**Houston, Tex.**—City Council has selected Uvalde rock asphalt as material for paving of Capitol from Austin to Crawford and has awarded contract for work to Uvalde Rock Asphalt Co. Three-inch bitulithic paving was decided for

paving of Capitol from Main to San Jacinto. Contract was awarded to Texas Bitulithic Co. Vertical brick paving was selected for paving of Travis from Rusk to Texas. Contract was awarded to Horton & Horton.

**San Antonio, Tex.**—City Council has contracted with Long-Bell Lumber Co., of Kansas City, to supply city with from 75,000 to 100,000 square yards of creosoted pine blocks at \$1.60 a square yard for 3½-inch blocks and \$1.38 for 3-inch blocks. Council also authorized Mayor to sign contract with G. & H. Haglestein for 25,000 to 100,000 square yards of mesquite blocks at \$1.16 for 3½-inch blocks and \$1 for 3-inch blocks, in event 100,000 square yards are used.

**Tyler, Tex.**—Contract for building of 25 miles of road out from Tyler has been let to firm of Karner Bros., of Dallas, for sum of \$33,534. Roads will be built of sand clay and improvement is first of series made possible by recent election in which it was voted to make bonds to sum of \$300,000 for purpose of building sand clay roads in this district. Entire job will be directly under direction of Mr. S. C. Dreyfus, of Alabama, chief road engineer employed by Tyler good roads commissioners.

**Norfolk, Va.**—Seventh Ward Local Board has awarded to Louis Lawson contract for 25,000 yds. of smooth paving in Riverview section and Highland Park, for \$38,984, while contract for curb and gutter on Holly Ave. has been let to J. U. Addenbrook's Sons, Inc., for \$2,200. Paving is to be on Lavalette and Lucile Aves., 38th, 39th, 40th, 41st and 42d Sts., in Riverview, and on 38th St., in Highland Park, better known as Pocahontas Ave., connecting the Seventh and Tenth Wards.

**Fairmount, W. Va.**—By Co. Comrs. for constructing 18 miles roads in Mannington Dist.: French & Allen, Baltimore, Md., \$215,971; Lassiter & Raglan, Oxford, N. C., \$59,229, and Atlantic Bitulithic Co., Richmond, Va., \$39,641.

**Centralia, Wash.**—Lewis County Commissioners have awarded to Allred & James, Centralia contractors, contract for hard surfacing county road from south limits of this city to Southwest Washington fair grounds. Contract price is \$13,000. Other bidders were Albers & Son, \$14,053.50; W. J. Glover, \$14,472.72; L. C. Slothrop, \$13,900, and Jarvis & Garbe, \$13,943.

**Chehalis, Wash.**—Lewis County commissioners have awarded contract to James and John Hendricks to build grade on Pacific Highway north of Forest from foot of hill to Phillips Bridge across Neukum River.

**Olympia, Wash.**—By State Highway Commission, contracts for highway work totaling about \$31,000. Awards were: For 3 miles near Carrolton, on the Pacific Highway, \$22,713; contract awarded to Jeffrey & Buffton, of Portland. For 5.7 miles near Colville, on State Road No. 2, \$8,225; contract awarded to H. C. Root & Co., of Spokane.

**Seattle, Wash.**—For constructing roads as follows: Kirkland Medina Road to Geo. A. Bandadaree of Renton, \$14,718; C. L. Norris Road to L. C. Lane, Hinckley Block, \$44,930.

**Green Bay, Wis.**—By County Highway Comr. for Cedar Road in Preble, to J. Journe & Bro., at \$17,500.

## SEWERAGE

**Bridgeport, Conn.**—Construction of sewers in outlying districts of city is being discussed.

**Orland, Cal.**—Orland City Trustees have decided to call another bond election for May 5th. Election will be for purpose of bonding town for \$15,000, which money will be used for extending sewer system and water mains of town.

**Orland, Cal.**—City Trustees of Orland, Glenn County, have decided to call election for May 5 to vote on issue of bonds of \$15,000 for extension of sewer and water systems. Town is growing so rapidly that increased facilities are needed.

**San Francisco, Cal.**—Supervisors have been asked to provide for new sewers in Jordan Park, cost of which is estimated by City Engineer at \$25,000.

**Bridgeport, Conn.**—Construction of East Side trunk sewer has been ordered by courts.

**Hartford, Conn.**—Citizens have voted \$100,000 bonds for extension of Homestead Ave. intercepting sewer.

**De Land, Fla.**—Bond issue of \$200,000 is being discussed for storm sewerage, street paving and city buildings.

**Alton, Ill.**—Bids will be received by Board of Local Improvements until 2 p. m., April 25, for construction of sanitary sewers. About 13½ miles of main sewer and 4½ miles of laterals. Esti-

mated cost, \$95,000. J. E. Schwaab, city engineer.

**Frankfort, Ind.**—See "Streets and Roads."

**Mason City, Ia.**—Extension of sewer system about 7,000 ft. lower down Lime Creek and building of disposal plant is being planned. Prof. Bass, of Minneapolis, has been in city in conference with Engineer Wilson relative to proposed plans and specifications. The Imhoff system of disposal is being investigated. The plant proper would cost to exceed \$60,000.

**Topeka, Kan.**—As result of petitions that are being circulated in Topeka, W. G. Tandy, city commissioner of streets and public improvements, is planning to build from Sixth and Morris Aves. to Kansas River sewer main to cost \$24,000.

**Laurel, Md.**—Bonds in sum of \$52,000 will be voted on April 20 for sewers.

**Mount Rainier, Md.**—See "Water Supply."

**Nantucket, Mass.**—Openings of bids for construction of sewers will be postponed until 2:30 p. m., April 28, 1914. Robert Spurr Weston, 14 Beacon St., Boston, Mass., Engr.

**Waltham, Mass.**—City may shortly extend sewage system to new Pond End school.

**North Platte, Neb.**—City will shortly call for bids on 3 sewers jobs of four blocks each, total length about 3,600 ft. of 10-in. pipe, 3 flush tanks and 4 to 6 manholes. C. F. Temple, Clerk.

**Jersey City, N. J.**—Reconstruction of sewers throughout city has been estimated by Mr. Ferris as \$1,339,682.96, sewage disposal plant at \$490,000, street development \$115,967.50, improvement of west bank of Hackensack River to replace present scavengers' dock \$14,850, Cornelison Ave. stable \$50,000, and dump board at Morgan St. dock \$5,000. Biggest item in pipe lines is that including Henderson, Second and Fourth Sts. sewer line, which will cost \$125,000. Two disposal plants on west side of city are figured at approximately \$75,000.

**Madison, N. J.**—Increase of \$55,000 in bond issue for sewer system is being considered.

**Pitman, N. J.**—Plans for new sewer system are being considered by committee.

**Brooklyn, N. Y.**—Adequate sewerage facilities for section easterly from Nosstrand Ave., between Malbone St. and Church Ave., is being discussed.

**Lyons, N. Y.**—Plans for sewage system and sewage disposal plant have been approved.

**Syracuse, N. Y.**—Bill has been approved for \$100,000 bond issue for storm water sewers in First and Second Wards.

**Cochecton, O.**—State board of health has instructed city that it must construct sewage disposal plant with trunk sewer lines leading to it to take care of entire city.

**Dayton, O.**—Preliminaries have been disposed of for issuance of bonds in sum of \$30,000 by City Commission for purpose of making preparatory survey looking to construction of sewage disposal plant.

**Kent, O.**—Construction of sewage disposal plant and a sewer system will begin shortly; cost about \$140,000. R. T. Bailey is Engr.

**Struthers, O.**—Ordinances have been passed by council providing for constructing five sewers in Struthers during the summer.

**Urbania, O.**—Board of control has rejected all bids received for construction of sewage disposal plant and has re-advertised for work. New bids will be received until noon on April 23. Five bids were received by the board and all were above amount provided in bond issue for work and were as follows: Löwensohn and Ule, Kent, \$49,029.28; J. C. Devine & Co., Alliance, \$49,950.12; D. E. Sullivan and Co., Columbus, \$57,310.58; L. K. Sherman and Co., of Chicago, \$58,877.37; Lookout Construction Co., Chattanooga, Tenn., \$61,629.25.

**Seaside, Ore.**—Green & Green of Spokane are preparing plans for sewer at cost of \$60,000. W. H. Bell is C. E.

**Erie, Pa.**—Council will probably shortly issue bonds for \$40,000, money to be expended in constructing storm sewers.

**New Castle, Pa.**—Sanitary sewer will be constructed from Fern St. to Beatty St.

**York, Pa.**—City Engineer George A. Warner is engaged in preparing specifications and advertisements for bids for laying new storm water sewers contemplated in Councilman Boyer's ordinance, as well as for street paving, also called for in ordinance which he introduced.

**Woonsocket, R. I.**—On recommendation of finance committee council has passed resolution appropriating \$12,000 for two new filter beds for sewer department.

**Allendale, S. C.**—Bonds in sum of \$65,000 have been voted for sewerage, water and light.

**Sioux Falls, S. D.**—Bids for construction of lateral sewers on following streets have been received as follows: Center Ave., from 18th St. to 21st St., Fanebust Bros., \$732.80; Myrmo Bros., \$775.90; Summit Ave., from 18th St. to 264 ft. north of 16th St., Fanebust Bros., \$845; Myrmo Bros., \$868.42; Duluth Ave., from 10th St. to 11th St., Fanebust Bros., \$248.80; Summit Ave., from 18th St. to 19th St., Fanebust Bros., \$196.60; Myrmo Bros., \$206.85; 19th St., from Center Ave. west 205 ft., Fanebust Bros., \$132.50; Myrmo Bros., \$145; 18th st., from Dakota Ave. to Main Ave., Fanebust Bros., \$566.40; Ninth Ave., from Great Northern track to 22d St., Fanebust Bros., \$778.40. They have been referred to Commissioner Gates and City Engineer Howe, with power to act.

**Teague, Tex.**—City Council of this city has granted sewerage franchise to Messrs. W. R. Boyd, Jr., and John W. Philip, of Dallas.

**Watertown, Wis.**—Construction of proposed storm sewers and appurtenances in parts of Montgomery and Arthur Sts. will probably be let to Waukesha Construction Co., as that company filed lowest of two combined bids received. The Waukesha Company's bid was \$1,849.50; F. E. Kaminski bid \$1,986.75.

#### CONTRACTS AWARDED.

**Berkeley, Cal.**—Four contracts for tributary sewers in Berkeley have been awarded by City Council, as follows: Contract No. 7, R. C. Storrie, Oakland, \$26,634; contracts Nos. 5 and 6. Contra Costa Construction Co., Berkeley, \$44,142.46 and \$35,153.20; contract No. 8, Michael Heafey, Berkeley, \$26,728.70.

**South Pasadena, Cal.**—City trustees of South Pasadena have opened number of bids upon part of sewer system planned for city, and awarded contract to R. N. Nikicevich, of Los Angeles, who offered to build sewer system for about half of city at cost of \$51,456.08. Other biddings and sums named are as follows: Leo C. Miletich, of Los Angeles, \$71,910.40; J. C. Wukojevich, of Los Angeles, \$68,727.04; John Radich, of Los Angeles, \$70,167; J. C. Duncan, Los Angeles, \$65,735.42; Mlajenovich & Gillespie, Los Angeles, \$58,272.14; Andrew Holloway, Pasadena, \$60,189.22; C. D. Vincent, Oakland, \$74,426.02; John Supalo, Los Angeles, \$63,429.40; James Stanley, San Diego, \$63,240.02; McClain & Walsh, Los Angeles, \$63,606.92; Joe Chupek, Los Angeles, \$54,991.66.

**Augusta, Ga.**—The river and canal commission has awarded two large sewer contracts in connection with general plan of flood protection, two contracts aggregating \$53,079.82. Work has been divided into "contract No. 1" and "contract No. 2." First contract affects changing of sewers that empty into river at Fifteenth and Eleventh Sts., and second contract affects the changing of the Eighth St. sewer. Latter was awarded to Case & Cothran, of Atlanta, their bid being \$15,079.82, and former contract was awarded to Jonas & Garretson, of Palm Beach, Fla., whose bid was \$38,000. Following were bidders for two contracts:

Contract	Contract	
No. 1.	No. 2.	
W. F. Bowe, Augusta .....	\$46,440.00	\$21,946.00
A. J. Twiggs & Son, Augusta .....	40,628.00	19,114.00
Dysard Construction Co., Atlanta .....	64,606.75	27,100.00
Municipal Engineering Co., Atlanta .....	52,390.00	26,360.00
Sullivan & Long, Bessemer, Ala. ....	39,997.00	18,526.00
Guild & Co., Chattanooga ..	45,587.86	21,362.14
W. Z. Williams Co., Macon .....	42,000.00	19,500.00
A. J. Martin & Patterson, Danville, Va. ....	47,858.16	21,118.20
Porter & Boyd, Charlotte .....	53,000.00	26,000.00
Bryan & Co., Jacksonville ..	52,700.00	22,800.00
Nicols Contracting Co., Atlanta ..	45,502.60	no bid
Jonas & Garretson, Palm Beach, Fla. ....	38,000.00	19,000.00

**J. C. Fairey, Orangeburg, S. C.**—Contract for construction of sewer system, Atlanta, no bid, 15,079.82.

**Chicago, Ill.**—By Board of Local Improvements for construction of tile pipe sewers, with brick manholes and brick catch basins in various streets, to Angelo Santucci, Louis Scully, P. J. McNulty Co., Thomas Burke, Achille Scully, Simon Ryan, Theodore Di Vito, and Cleary Bros. For drains in various streets to George Pontorelli, Simon Ryan, J. J. Lynch, Garrett Barry, Angelo Santucci and Louis Scully.

**Baltimore, Md.**—Eight Contractors have submitted bids before Board of Awards for installation of Imhoff sludge tank and sludge beds at Back River disposal plant of Sewerage Commission. C. B. Clark & Co. will probably get contract at their aggregate bid of approximately \$127,000. Other bidders were: The McLane Contracting Co., Jas. A. Braley, the Vang Construction Co., James Ferry & Sons, Mason, Hilton & Co., and the Elkton-Tufts Construction Co.

**Baltimore, Md.**—For storm water contract No. 38 to Jas. Ferry & Sons, Baltimore, at \$64,945.25.

**Franklin, Mass.**—By city for vitrified sewer pipe, Y-branches bends and stoppers to C. H. Spring Co., Newton Lower Falls, at \$11,101.

**De Soto, Mo.**—For constructing Pratt St. sewer to De Soto Grading & Constructing Co. at \$10,933.

**St. Paul, Minn.**—Contract for Hamline-Jefferson sewer system, St. Paul's second largest one, has been awarded by Board of Public Works. It will cost \$228,000 and will be constructed by O'Neil & Preston. Successful firm's bid was \$95,000 less than next highest. Work will be started about June 1. Only half as many contractors bid on big job as submitted proposals on Maryland-Brainard system. Contract for latter job was awarded to O'Neil & Preston for \$29,019. Bids ranged up to \$36,850.

**Newark, N. J.**—Contracts for construction of Section 13 of trunk sewer will be awarded by Passaic Valley Sewerage Commission at its next meeting. Awards will also be made at next meeting for railroad siding from Bay Shore Railroad to pumping station in meadows. Lowest bidder for sewer was Carrington Construction Co., of Jersey City, at \$252,202.50. Next higher bids were of the Beaver Engineering & Construction Co., of New York, \$289,579, and Leo E. Kelly, Inc., of New York, \$309,234. Bid of the New York & New Jersey Construction Co. at \$15,000 was lowest on railroad siding. Next two bids were B. Foster Calhoun Co., of New York, \$22,500, and Patrick McMeel of Brooklyn, \$23,000.

**Binghamton, N. Y.**—Following bids have been opened for sewer construction: Merrill St.—Mike Barber, \$510.34; Frank Stento, \$600; George Serifina, \$438.15; George Pignatello, \$545.55. Contract was awarded to George Serifina. Tracy St.—Mike Barber, \$559; David Tumposky, \$523.56; Frank Stento, \$650; George Pignatello, \$619; George Serifina, \$449. Contract was let to George Serifina. Emma St.—Mike Barber, \$509.18; Frank Stento, \$593; David Tumposky, \$492.37; George Pignatello, \$500; George Serifina, \$465.15. Work was awarded to George Serifina.

**Brooklyn, N. Y.**—For constructing sewers in Surf Ave. (a) Section No. 1 and (b) Section No. 2 to (a) Ward & Tully, Inc., at \$79,626 and (b) Henry E. Fox Construction Co., at \$42,168.

**Lorain, O.**—By Director of Public Service for sewer construction to P. T. McCourt, Akron, \$68,088. Other bids as follows: Jones Construction Co., Mt. Vernon, O., \$68,305; Carlan & Heckler, Cleveland, \$69,434; Gale Installation Co., Chicago, Ill., \$72,311.

**Urbania, O.**—To Boyd and Cook contract for storm sewers on North Main, Scioto, South Main Sts. and Monument Square, at their bid of \$2,724.05.

**Reading, Pa.**—To Fehr & O'Rourke, Reading, and Cantrell Construction Co., Philadelphia, have been awarded contracts to construct sewers in Reading—former at \$16,761.57, and latter at \$37,436.27 and \$36,357.71 for two districts.

**Columbia, S. C.**—For furnishing about 5,500 lin. ft. sewer pipe and specials to Chattanooga Sewer Pipe & Fire Brick Co., Chattanooga, Tenn., \$2,272, and for laying pipe to Weston & Brooker, Columbia, \$4,320. John McNeal is City Engr.

**Memphis, Tenn.**—By City Comrs. for Gayoso Ave. interceptor, to Thomas Harmon & Hickey Bros., 406 Navarre Bldg., St. Louis, as follows: Outfall complete,

\$27,530, 6,286 cu. yds. plain concrete in tunnel, \$9.10; 18,745 cu. yds. excav. in concrete tunnel, \$6; 34,702 cu. yds. open cut excav., 90 cts.; 70.8 cu. yds. reinforced concrete in special sections, \$13.12; 2,864 cu. yds. reinforced concrete in circular sections, \$12.30; 179 cu. yds. manhole excav., \$3; 39.4 cu. yds. manhole concrete or brick masonry, \$15; 8,197 sq. yds. vitr. brick invert lining in brick tunnel, \$1.99; total, \$282,031. For Huling Ave. sewer, to Southern Asphalt & Constr. Co., 814 American Trust Bldg., Birmingham, Ala., as follows: Outfall complete, including excav., etc. \$8,673; 7,102 cu. yds. brick masonry in tunnel, \$12.63; 6,712 cu. yds. plain concrete in tunnel, \$8.61; 21,825 cu. yds. excav. in brick tunnel, \$5.98; 20,546 cu. yds. excav. in concrete tunnel, \$5.98; 8,667 cu. yds. excav. open cut, \$1.45; 537 cu. yds. reinforced concrete in special sections and rectangular sections, \$14; 592 cu. yds. reinforced concrete in circular sections, \$12.16; 127 cu. yds. manhole excav., \$5.10; 93.4 cu. yds. manhole concrete or brick masonry, \$12.86; 7,195 sq. yds. vitr. brick invert lining, \$1.60; total, \$229,973. For stripping North Memphis levee site to F. D. Harvey & Co., for 32 cts. per cu. yd.; total, \$21,125.

### WATER SUPPLY

**Orland, Cal.**—See "Sewerage."

**Waterbury, Conn.**—Building of storage reservoir in Thomaston in section known as Poverty Hollow is being considered.

**Peoria Heights, Ill.**—Plans are under consideration by City Council for installation of water system at cost of \$50,000.

**Richmond, Ind.**—Superintendent Dill of Water Works Co. has agreed to extend mains on North 19th St., from F to J Sts., and on North J St., from 12th to 19th.

**Knoxville, Ia.**—City Engineer will make surveys for installation of proposed water system at estimated cost of \$70,000.

**Augusta, Me.**—Special election will be held April 21, at which all voters of Water District will vote upon question of whether trustees of district shall be given authority to issue bonds to amount of \$75,000 for purpose of establishing filter plant and extending mains to South Gardiner.

**Augusta, Me.**—Installation of filter plant and extension of water mains to South Gardiner are being discussed.

**Laurel, Md.**—Bonds in sum of \$23,000 will be voted on for water extension and filtration.

**Mount Rainier, Md.**—Citizens will vote on April 21 on installation of water and sewerage system and electric light plant, for which legislature has authorized bond issue of \$125,000.

**Waltham, Mass.**—Improvements to water system are being planned.

**Melstone, Mont.**—City has retained services of C. H. Green, of Spokane, as consulting engineer, to make surveys, preparatory to reporting on installation of waterworks system.

**Ord, Neb.**—City is considering expenditure of \$18,000 for extension of water system. Bruce & Standeven, Bee Bldg., Omaha, are Consulting Engineers.

**Keene, N. H.**—City Council has ordered all services to be metered, complete by 1915.

**Perth Amboy, N. J.**—Board of Water Commissioners have directed city engineer to draw plans and specifications for driving test well 4 to 600 ft. deep. Board intends to get bids for such work, and have test made immediately. Plans and detail specifications of engineer for standpipe to be erected in northwestern section of the city have been approved by board.

**Passaic, N. J.**—Purchase of plant of East Jersey Water Company is being considered.

**Oneida, N. Y.**—Commission will be appointed to arrange for water to be taken from Fish Creek or some other available stream in Madison or Oneida County. Estimated cost of bringing soft water into city is about \$350,000. Bonds are to be issued in that amount for term of twenty years.

**Oswego, N. Y.**—Department of Water will request Common Council for appropriation of \$5,000 for extension of mains into various parts of city.

**Schenectady, N. Y.**—Bids will be advertised for following: Three street sweepers to be added to present battery of eight in street department; for cast iron water pipe to be used in completion of a water pipe line from city wells to suburban section of city; for gates and hydrants to be used on this pipe line, and for hauling of pipe, gates and

hydrants to points necessary for construction of line.

**Tonawanda, N. Y.**—Contract has been awarded by Tonawanda Board of Public Works for 20-in. water main which will be laid in Main St. next month. Contract price was \$7,336.50.

**Steubenville, O.**—City of Steubenville \$10,000 water main bonds have been sold to New York Life Co. for \$10,065.

**New Castle, Pa.**—Citizens have decided to erect water plant.

**West Reading, Pa.**—State has issued permit to West Reading Water Co. to erect \$10,000 filtration plant of rapid sand gravity type.

**Allendale, S. C.**—Bonds in sum of \$65,000 have been voted for water, lights and sewerage.

**Dallas, Tex.**—Recommendation that City Secretary be instructed to advertise for bids on 73 tons of 8-in. water pipe and necessary connections has been filed for City Commissioners by Commissioner Nelms. Pipe will be used in laying water main on 12th St. from Clinton to Rosemont and from Rosemont to Jefferson.

**Timpson, Tex.**—Bond issue has been voted for water works construction.

**Whiteweight, Tex.**—Waterworks bonds in sum of \$6,000 have been voted.

**Lynchburg, Va.**—Water committee has submitted report recommending immediate installation of auxiliary water supply and filtration plant, and resolution adopted by Common Council as amended by that body authorizing city engineer to prepare detailed plans of scheme, including municipal light plant, and advertise for bids at earliest possible moment.

**Norfolk, Va.**—Appropriation of \$75,000 has been allowed for purchase of water meters.

**Toronto, Ont., Can.**—Mechanical filtration addition of the "Ransome" sand filter has been recommended by K. C. Harris, Comr. of Works.

### CONTRACTS AWARDED.

**Sacramento, Cal.**—By City Council contract for construction of reinforced concrete reservoir to Mathews Construction Co., Sacramento.

**Jacksonville, Fla.**—F. W. Long of Jacksonville is lowest and successful bidder for remodeling old water works plant. Estimated cost, \$35,000. Contract for the cast-iron pipe in and around yard has been awarded to American Cast Iron Pipe & Foundry Co., of Birmingham. Total sum was not mentioned, this depending upon amount required and prices being submitted on per foot basis of several sizes. This was also true of contract for valves awarded to the Chapman Valve Manufacturing Co., of Indian Orchard, Mass. In addition to these awards water committee gave to Thomson Meter Co., of New York City, contract for supplying Jacksonville with water meters for comprising 12 months, amount of this contract, of course, also depending upon number of meters required.

**Campbellsville, Ky.**—To Bell Construction Co., Lexington, Ky., contract to construct waterworks and filter plant.

**Springfield, Mass.**—By Board of Water Commissioners contract for c. i. water pipe and special castings to U. S. Iron Pipe & Foundry Co., Philadelphia, Pa., at \$21.25 per ton and \$55 per ton respectively.

**Raton, N. M.**—For installation of municipal water system to J. B. Gordon, Pueblo, Colo.

**New Brunswick, N. J.**—Board of Water Commissioners has received six bids on 447 tons (approximate) of pipe, divided into 146 tons of 12-in. pipe; 65 tons of 10-in.; 46 tons of 8-in., and 190 tons of 6-in. pipe. Lowest bidders were: R. D. Wood & Co., and Standard Cast Iron & Pipe Co., and there was but a difference of \$17.60 on the bids. R. D. Wood submitted bid of \$20.20 per ton, which brought the total bid to \$9,029.40. Bid of Standard Cast Iron & Pipe Co. was \$9,047. After long deliberation bid was finally awarded to latter firm. Other bidders were: Warren Foundry & Machine Co., \$22 per ton by Raritan River, and \$22.50 f. o. b. New Brunswick by Pennsylvania Railroad. John Fox & Co., \$21.26 per ton. United States Cast Iron & Pipe Co., \$20.80 per ton. Lynchburg Foundry Co., \$21.67 per ton.

**Barberton, O.**—Contracts for two deep-well pumps for new water source auxiliary have been let by board of control to Keystone Driller Co. of Beaver Falls, Pa. Contract price is \$2,035. f. o. b. Barberton. Contract for two 15 horsepower motors has been let to Gangle-Harbaugh Construction Co. of Akron.

**Salem, O.**—To J. C. Devine, of Alliance, contract for covering of water basin at pumping station on West Main St.

**Steubenville, O.**—By Water Comm. and Bd. of Control for constructing filtration plant to Norwood Eng. Co., Florence, Mass., at \$130,000.

**Bethlehem, Pa.**—By Council contract for 1,500,000 gallon steel tank to Tippey & Wood, Phillipsburg, N. J.

**Pawtucket, R. I.**—By Public Works Department contract for 900 tons of water pipe to Standard Cast Iron Pipe & Foundry Co., Bristol, Pa., at \$20.60 per ton.

**Seattle, Wash.**—By City Council contract to John Wood Iron Works for furnishing 136-in. steel pipe and fittings for use at masonry dam, at \$71.47.

**Milwaukee, Wis.**—For furnishing material and setting lake crib for Linwood Ave. intake to W. A. Bowers, 484 Market St., Milwaukee, at \$89,700; also contract for boilers for North Point pumping station, at \$13,678.

**Victoria, B. C.**—For fabricating and laying 11½ miles 36-in. riveted steel pipe for Sooke Lake water supply to Burrow Eng. Co., Vancouver, at \$324,000.

### LIGHTING AND POWER

**Gadsden, Ala.**—City Council has definitely decided to secure detailed information as to feasibility and cost of municipal light and power plant and meeting will be held within next few days to work out preliminary plans.

**Tallahassee, Fla.**—City will shortly enlarge electric light plant. W. M. McIntosh is Board Public Works.

**Chicago, Ill.**—Drainage Board has voted to advertise for bids on 2,000 new nitrogen lamps which are to be supplied the city. It also voted to advertise for bids on synchronous condensers, which are designed to increase flow of electrical energy from point of generation at Lockport to Chicago.

**Manilla, Ia.**—Proposal to issue \$20,000 for installation of municipal electric light plant has been carried.

**Larned, Kan.**—Proposition to issue \$90,000 of city bonds for municipal light and power plant has been carried by vote of over three to one.

**Nickerson, Kan.**—Bonds for \$26,000 have been let for construction of waterworks.

**Pratt, Kan.**—Election on bonds for municipal lighting plant has been held as ordered by recent supreme court decision. Bonds heretofore voted were sustained in city by majority of 511. Plant will be built at once at cost of \$50,000.

**Topeka, Kan.**—Supreme Court has ordered Pratt to hold election on electric light bond proposition.

**Bowling Green, Ky.**—Kentucky Public Service Co. has offered to furnish electricity to maintain ornamental street lighting system and other lamps at \$3,714 per year.

**Winchester, Ky.**—Council committee and Mayor have made arrangements for extension of "Great White Way" system from C. & O. tracks to L. & E. bridge. System is also to be extended on west side of Main St. to alley on south side of Winchester Garage.

**Melville, La.**—Board of Aldermen has enacted ordinance calling general election May 2 to determine whether or not Melville would issue twenty-year bonds to amount of \$15,000, to be expended in erection of an electric light plant.

**Mount Rainier, Md.**—See "Water Supply."

**Brockton, Mass.**—Highway Commission is considering removal of 80 arc lamps in street lighting system and for installing about 300 incandescent lamps.

**Wakefield, Mass.**—Citizens will extend electric service on several streets in town and street lighting service into Montrose Ave.

**Elizabeth, N. J.**—L. E. Todd of lighting committee has reported that Public Service will probably install within the year modern arc lamps all over city.

**Newark, N. J.**—A saving of \$35,000 to city will result from new lighting contract agreed upon this afternoon by Board of Works Commissioners Albert H. Bierbaum and Charles F. Kraemer and representatives of Public Service Electric Co. New contract, which will run for five years, was submitted to the Board of Works. For present flaming arc lights such as those in Broad St., the city now pays \$120 apiece a year. Under new contract they will cost \$97 apiece. All new lights of this kind which are installed under new contract will cost but \$87.50. Other lights throughout city will cost \$58.50 apiece.

**Albany, N. Y.**—Second District Public Service Commission has issued order authorizing Orange County Lighting Co. of Middletown, to issue \$73,400 of its 6 per cent. 15-year convertible mortgage

bonds to be sold, proceeds to be used for additions and improvements to its lighting system.

**Binghamton, N. Y.**—Ordinance may be introduced calling for bonding election to determine whether \$158,000 shall be voted for municipal lighting plant.

**Fulton, N. Y.**—Board of Public Works has decided to advertise for bids on revised plans for lighting streets. All companies submitting estimates will be required to bid on both series and multiple systems.

**Lestershire, N. Y.**—Plans are being considered for an up-to-date lighting system in near future. There are 155 lights in the new plan, one for every street corner in the village, boulevard lights for Main St. and others where needed.

**Niagara Falls, N. Y.**—Board of Estimate and Apportionment, the Board of Public Works and finance committee of Common Council will have joint meeting to decide upon extent of decorative lighting system in Main St. from Michigan Ave. to Third St. Means of financing work will be decided upon. Twin lamp system, such as that in North Main St., would cost about \$28,000, half of which would be paid by property owners and remainder by city. A single lamp system would cost about \$20,000.

**Wilson, N. C.**—Voters have decided in favor of gas franchise.

**Painesville, O.**—Council has approved of \$5,000 bond issue for lighting purposes, which include installation of ornamental street lighting system.

**Philadelphia, Pa.**—Municipal electric light plant is being discussed.

**Allendale, S. C.**—Bonds in sum of \$65,000 have been voted for lights, water and sewerage.

**Ehrhardt, S. C.**—Citizens have voted in favor of installation of electric lighting.

**Columbia, Tenn.**—John H. Carpenter and associates have been awarded franchise to furnish lighting facilities to city for term of years.

**Paris, Tenn.**—City is planning to rebuild electric light plant and to change system from 3-wire direct current to 60 cycles, alternating current. M. W. Younkin is manager.

**Sherman, Tex.**—The Texas Light & Power Co. is making preparations to spend \$18,000 in betterments in Sherman. Most of money will be spent in new poles, raising wires higher and putting in heavier wires.

**Richmond, Va.**—At request of Superintendent Knowles of gas department administrative board has forwarded to the Council recommendations providing for \$18,000 appropriation for three water gas purifiers at lower gas works.

#### CONTRACT AWARDED.

**Baltimore, Md.**—To Stuart R. Carr & Co. contract for 35 ornamental electric lamp posts for Clifton Park.

#### FIRE EQUIPMENT

**Douglas, Ariz.**—City may purchase two motor hose chemicals.

**Miami, Ariz.**—Purchase of fire hose is being considered.

**Los Angeles, Cal.**—Supply Committee of Council will shortly advertise for bids for two motor combination pumping engines and hose wagons. A. J. Eley is chief.

**Crown Point, Ind.**—Purchase of horse-drawn combination chemical and hose wagon is being discussed.

**Logansport, Ind.**—Board of Public Wks. has adopted plans and specifications for construction of new \$6,300 fire station, to be erected on south side of this city.

**Mitchellville, Ia.**—Bids may be asked for about 1,000 ft. of hose. W. A. Porter is mayor.

**Joplin, Mo.**—Purchase of apparatus to make aerial fire truck motor driven is being discussed.

**Tonopah, Nev.**—New motor fire truck will be purchased at cost of \$3,500.

**Elizabeth, N. J.**—Bond issue will be recommended for erection of new fire house at Third and South Park Sts.; also bond issue in sum of \$25,000 to better equipment of fire departments.

**Margate City, N. J.**—Mayor Ralph Harcourt of Longport has been awarded bond issue of \$9,000 for purchase of fire apparatus.

**Newark, N. J.**—Automobile fire fighting apparatus will be purchased for Essex County Hospital at Overbrook.

**Geneva, N. Y.**—Purchase of motor combination chemical and hose wagon is under contemplation.

**Holley, N. Y.**—Purchase of auto fire truck is being considered.

**Lockport, N. Y.**—To place chassis under Washington chemical engine and new aerial hook and ladder truck of Protection Hook and Ladder Co. is plan of fire commissioners and Chief Radigan.

**Middletown, N. Y.**—Members of Ontario Hose Co. No. 5 are urging purchase of auto fire truck.

**Schenectady, N. Y.**—Plans are being made for extensive changes in fire alarm system.

**Hazleton, Pa.**—City Clerk will advertise for bids for motor apparatus.

**Lebanon, Pa.**—Ordinance has been adopted authorizing appropriation of \$950 for purchase of six new fire alarm boxes for city.

**Lebanon, Pa.**—An ordinance asking for appropriation of approximately \$1,000 for installation of fire alarm boxes in this city will be introduced in Council.

**Williamsport, Pa.**—It has been decided to purchase new fire engine to be used at No. 4 engine house.

**East Providence, R. I.**—Another piece of motor-driven fire apparatus may be purchased.

**Westerly, R. I.**—Bodies of two hose wagons will be placed upon chassis, which will be driven by 35 h. p. motors.

**Columbia, Tenn.**—Board of mayor and aldermen have accepted new 100-horsepower fire truck that was recently purchased by city. Cost of truck was about \$9,000. It was also decided to purchase 500 feet of fire hose.

**Belton, Tex.**—Fire and Water Committee of City Council has been instructed to purchase five-passenger automobile for use of Chief of Fire Department.

**Vancouver, B. C., Can.**—A fireboat, motor water tower and motor service truck may be purchased.

#### CONTRACTS AWARDED.

**Douglas, Ariz.**—By City Council contract for two combination chemical and hose motor cars to Seagrave Co., of Columbus, O., at \$11,000.

**North Tonawanda, N. Y.**—North Tonawanda fire commissioners have received nine proposals for supplying auto hook and ladder truck. The American-La France Fire Engine Co. of Elmira, was lowest bidder for six-cylinder engine, price being \$6,500, while Robinson Fire Apparatus Co. of New York, was low on four-cylinder engine with their bid of \$5,700. Board will award contract later.

**Providence, R. I.**—For erection of fire station to F. G. Kingston Co., at \$16,376.

#### BRIDGES

**Marysville, Cal.**—First preliminary step toward construction of new D St. bridge over Yuba River at this point has been taken by Board of Supervisors when it was decided to advertise for bids upon work of boring test holes in river for foundation.

**Redding, Cal.**—City Trustees have received word from State Highway Commission that plans for Redding State highway bridge across Sacramento River had been accepted. City Trustee will meet at once and advertise for bids and let a contract.

**Salina, Kan.**—Appropriation of \$25,000 will be made for construction of reinforced concrete bridge on Iron Ave.

**Snow Hill, Md.**—Bill has been passed authorizing Worcester County to issue \$25,000 bonds for bridges.

**Big Timber, Mont.**—Bids have been opened for construction of bridge across Yellowstone River five miles west of Big Timber and contract awarded to Security Bridge Co., of Billings, at \$14,995.

**New Brunswick, N. J.**—County Board of Freeholders has passed resolution which was adopted, to build new steel and concrete bridge over Devils Brook on Plainsboro-Cranbury road. Resolutions were also adopted for repairs to both the Perth Amboy and South River bridges.

**Perth Amboy, N. J.**—Working plans for proposed Convery Place bridge, to be erected over Lehigh Valley tracks in western part of city, are well under way in offices of County Engineer Alvin Fox. He states that they will be issued, ready for bids, within next few weeks.

**Glens Falls, N. Y.**—Finance Com. has voted \$25,000 for erection of bridge over canal at Greens Bridge.

**Bismarck, N. D.**—State Engineer's office has just completed and turned over to Pembina County set of standard plans and specifications for bridges and culverts. Culverts furnished them were box and arched types and are to be made of reinforced concrete. Bridges run from 12 to 100 ft. in length, have 18-ft. roadway and are designed for concrete floors, although for present wooden floods will be used.

**Springfield, O.**—Bids may be called for in May for new bridge across creek at park entrance.

**St. Mary's, O.**—County Comrs. will construct double span concrete bridge over St. Mary's River at South St. and bridges at Minster and Buckland at total cost of \$45,000.

**Beaufort, S. C.**—An issue of bonds not to exceed \$80,000 has been authorized by Beaufort County commissioners, proceeds to be used to build bridge extending from town of Beaufort across Beaufort River to Ladles and Saint Helena Islands.

**Chester, S. C.**—At April meeting of Chester County Board of Commissioners it was decided to erect splendid type of bridge over Caney Fork branch at early date.

**Loudon, Tenn.**—New concrete bridges will be erected at early date over Pond Creek, near Galyon's Gap, and also one over Fork creek, near Burton's mill. Appropriation of \$3,500 for building of these two bridges was made by county court.

**Austin, Tex.**—The Attorney-General's Department has approved issue of \$125,000 city of Dallas viaduct and bridge bonds.

**Dallas, Tex.**—County Engineer J. F. Witt and his staff will begin work upon surveys and plans for three new bridges to be built across Trinity River, as provided for in \$125,000 bond issue voted for viaduct paving and bridge building purposes.

**Smithville, Tex.**—The \$50,000 bridge bonds recently voted in Smithville precinct have been sold and plans and specifications for bridge drawn up and approved and bids are being advertised for construction of bridge.

**Merimac, Wis.**—Plans will be made for construction of bridge across Wisconsin River.

#### CONTRACTS AWARDED.

**Fort Wayne, Ind.**—Four bridge contracts have been let by county commissioners, one of them for dangerous Corkscrew curve, which will be eliminated by bridge. Bridge will be built by Elkhart Bridge Co. at cost of \$4,275. The Burke Construction Co. will construct bridge on Lima Rd. at cost to county of \$5,490. The Milan system of reinforcement will be used. Contract for building bridge, a half mile east of the Woodburn tile mill, to George Jaap on his bid of \$1,354. George Littlefield was awarded contract for bridge in Maumee township on his bid of \$317.

**Oskaloosa, Ia.**—Contracts for construction of thirty-five new bridges and culverts at various designated points throughout country have been let by board of supervisors at total cost of \$13,995.14. Bid of Koss Construction Co., of Des Moines, was accepted by board for construction of thirty-four of new structures at cost of \$13,588.34, and bid of H. E. Whitlatch, of Oskaloosa, was accepted for remaining structure bridge located in Monroe Township, at \$406.80.

**Tipton, Ia.**—Supervisors have entered into contract for construction of 20 highway bridges at total cost of \$14,951. Successful bidders for various parts of work were P. M. Kingsbury, of Strawberry Point; Marsh Engineering Co., of Des Moines; the Missouri Ballast and Construction Co., and S. R. Johnston, of this place.

**Boston, Mass.**—To Lawler Bros. at \$45,517 for rebuilding Winthrop bridge and approach over Belle Isle Inlet, from Saratoga St., East Boston, to Main St., Winthrop. Three next lowest bidders were W. H. Ellis, \$46,872; John Cashman & Sons Co., \$48,405; John T. Cavanagh Co., \$52,500.

**Evelleth, Minn.**—To Lawrence-McCann Co. contract for concrete bridge on Adams Ave., for \$1,100.

**Haile, Mont.**—For constructing 3 bridges in Hill County by County Comrs. to O. Pepper Bridge Co., Missoula, \$30,000.

**Dayton, O.**—Contractors Wides and Mason, of Alexandria, Ind., were successful bidders for work of constructing new reinforced concrete arch bridge over Bear Creek at Dayton and Eaton Pike, one mile east of New Lebanon. Contract was awarded by county commissioners on Wides and Mason's low bid of \$7,568. New concrete arch bridge is to displace old covered bridge which now spans Bear Creek.

**Dresden, O.**—For constructing substructure of Dresden Bridge by County Comrs. to J. A. Swingle Contr. Co. of Dresden, at \$28,837.

**Lebanon, Pa.**—By bridge committee of Wilson County Court for erection of 4 bridges to Luten Bridge Co., of Nashville, Tenn.

**Chattanooga, Tenn.**—By County Bridge Commission contract for repairs to Walnut St. bridge to Nashville Bridge Co. for \$58,000. Bids were as follows: Foster-Creighton-Gould Co., Nashville, \$61,000; Noll Construction Co., Chattanooga, \$66,900; George Becking, Chattanooga, \$66,689; A. F. Hahn, Chattanooga, \$70,575; T. S. Moudy & Co., Chattanooga, \$62,450;

Chattanooga Boiler & Tank Co., \$68,500; John W. Ash, Chattanooga, \$66,765; D. F. Brandon, Chattanooga, \$66,792.

#### MISCELLANEOUS

**Colorado Springs, Colo.**—Commissioner A. J. Lawton, of Public Works, has been authorized to purchase automobile suction sweeper.

**Bridgeport, Conn.**—Three new motor cycles will be purchased.

**Waterbury, Conn.**—Bids will be received by Wm. F. Moher, City Clerk, until 8 p. m., May 18, for purchase of \$40,000 City Hall, police station and fire station bonds.

**Wilmington, Del.**—Ordinance has been passed authorizing bond issue of \$75,000 for park purposes.

**De Land, Fla.**—Bond issue of \$200,000 is being discussed for city buildings, storm sewerage and street paving.

**Pensacola, Fla.**—City of Pensacola has called for proposals for purchase of \$500,000 worth of special improvement bonds and it is intention to award contract immediately for construction of municipal dock and belt line railroad to cost at least \$400,000.

**Fort Wayne, Ind.**—Board of Works has ordered advertisements for bids to be received April 30 for construction of concrete retaining wall along St. Joe River north of State St. bridge to prevent further encroachments by stream on foundations of Spy Run Ave. pavement.

**Indianapolis, Ind.**—The Marion county council has adjourned after appropriating \$59,839.52, of which \$32,145.13 is for county's share of cost of track elevation work in Indianapolis for 1912, 1913 and 1914. Six thousand dollars was appropriated for eight new voting machines which are needed as result of addition of eight new precincts in county.

**Fulton, Ky.**—Fulton County is to have new jail, estimated cost of which is to be \$10,000 to \$15,000.

**Winchester, Ky.**—City authorities are contemplating purchase of street flusher for cleaning brick streets. Such a machine both sweeps and washes the streets. Cost is about \$1,000.

**Lake Charles, La.**—Purchase of automobile for police jury has been authorized.

**Bangor, Me.**—Following appropriations have been recommended by Mayor Horton: Highways, \$6,000; state highways, \$900; bridges, \$500; sidewalks, \$500; sewers, \$500, and water supply, \$1,800.

**Omaha, Neb.**—Purchase of new automobile for Health Commissioner Connell has been authorized by Council. Bids will be asked. No price limit has been set.

**Omaha, Neb.**—Omaha people may be asked to approve \$2,000,000 or more in bonds for various purposes at coming November election.

**Binghamton, N. Y.**—Plans have been made to fill in DeForest St., from Front St. to DeForest St. bridge two feet above high water mark and prevent overflow of roadway and washing out of earth in future.

**Binghamton, N. Y.**—Purchase of Hall road scraper, two street sweepers, 12 cans for sweepings and a street roller is being discussed.

**New York City, N. Y.**—Entire issue of \$65,000,000 of New York City have been awarded to syndicate composed of Kuhn, Loeb & Co. and Wm. A. Read & Co.

**Niagara Falls, N. Y.**—Board of Public Work has decided to pave part of public market.

**Oswego, N. Y.**—Purchase of pneumatic street flushes is being considered.

**Schenectady, N. Y.**—At meeting of Board of Contract and Supply matter of advertising for bids for three new street sweepers is scheduled to be taken up.

**Syracuse, N. Y.**—Commissioner of Public Works, Albert Van Wagner, has ordered asphalt plant and road roller to be used on trial.

**Springfield, O.**—Purchase of motor sweeper is being discussed.

**Woonsocket, R. I.**—Purchase of motor-driven combination patrol wagon and ambulance has been authorized.

**Benton, Tex.**—City Council has been instructed to purchase 5-passenger automobile to be used by Chief I. B. Warren of fire department.

**Yoakum, Tex.**—Bonds in sum of \$2,000 for incinerator have been sold.

**Milwaukee, Wis.**—Bonds in sum of \$60,000 have been voted for construction of public bath, and \$250,000 for dredging and docking and other harbor improvements.

#### CONTRACTS AWARDED.

**Indianapolis, Ind.**—By Board of Public Works contract to Troy Wagon Works Company, of Troy, O., for 10 dump wagons at \$124.50 each.

**Indianapolis, Ind.**—By Town Board of

Broad Ripple contract to Harding & Slattery Co., of Crawfordsville, for erection of concrete levee from dam of Indianapolis Water Co., along south bank of White River for distance of 625 ft. The Indianapolis Water Co. has agreed to complete construction of levee at this point to connect with levee of earth which has already been built at Warfleight addition. Improvement will cost town of Broad Ripple \$1,675 for construction work.

**Council Bluffs, Ia.**—Contract for constructing Fensler drainage ditch in Harrison-Pottawattamie district has been awarded to George Weatherly of Missouri Valley at joint meeting of boards of supervisors of two counties. Five bids were submitted on project. The Fensler ditch will entail excavation of more than 33,000 cu. yds. of dirt, and approximate cost will be in neighborhood of \$5,000. Weatherly agreed to do section 1 of ditch for 14.95 cents cash or 15.5 cents ditch warrants per cu. yd., and section 2 for 14.5 cents cash or 15 cents ditch warrants. Other bids included the following: C. A. Hoag, California Junction; Section 1, 12 cents cash or 15 cents ditch warrants; section 2, 14 cents cash or 17 cents ditch warrants. R. J. Phelps, Davenport: Section 1, 19 cents cash or 20 cents ditch warrants; section 2, 19 cents cash or 20 cents ditch warrants. Sebold and Bond, Loveland: Section 2, 16.5 cents ditch warrants. Lana Construction Co., Council Bluffs: Section 1, 16 cents cash or 17 cents ditch warrants; section 2, 16 cents cash or 20 cents ditch warrants.

**New Orleans, La.**—Contract calling for expenditure of \$105,000 has been awarded by State Board of Engineers for building of levee in St. Martin and St. Landry parishes. Board of Control of State Penitentiary was successful bidder of five submitting proposals, offering to do work for 17 4-5 cents a cu. yd. Next lowest bid was that of Caddo Engineering Co., asking 19 8-10 cents, and highest bid was that of J. Earl Rogers, asking 46 1-4 cents per cu. yd.

**Manistee, Mich.**—For erecting building at Michigan State Hospital to Herman Gundlach of Houghton at \$35,000.

**Jersey City, N. J.**—The M. T. Connolly Contracting Co. of this city was lowest bidder yesterday for contract for new addition to County Insane Asylum at Snake Hill. There were just 17 bids received by Freeholders and they ranged from Connolly bid of \$86,797 to Charles H. Neilson's bid of \$109,000. It is probable that Connolly Co. will be awarded contract at meeting to be held April 23.

**New York, N. Y.**—Bids for construction of two wings of Metropolitan Museum of Art have been opened by Board of Park Commissioners. Lowest bid, \$624,095, for two wings, was that of P. F. Kenny & Co., of 33 Old Broadway. Highest bid was \$755,000. Commissioners did not award contract, but sent lowest bid to Controller, who probably will award contract to Kenny & Co.

**New York City, N. Y.**—Bids have been opened for construction of Whitehall St. subway in Manhattan, which connects Montague St. tunnel to Brooklyn with lower Broadway subway in Manhattan, by which the B. R. T. taps big downtown business section. This section, known as No. 1 of Route 33, runs from Trinity Pl. and Morris St., mainly through Whitehall St., to South St. It will be a two-track line. Lowest bidder was Booth & Flynn, Limited, at \$2,056,000.

**Charlotte, N. C.**—To J. A. Jones at \$39,120 for erection of New Mecklenburg jail at corner of Mint and Fourth Sts.

**Portland, Ore.**—Contract for constructing Public Dock No. 2 has been let to Guthrie-McDougall Co. by Commission of Public Docks. Work is to cost \$229,447, which includes clearing site, riprap work and building double-deck dock. Lower deck will be of concrete and upper deck of timber.

**Henderson, Tenn.**—Contract for Forked Deer drainage district has been let to Mayor Robins, of Tupelo, Miss., at flat rate of \$48,000. Work is to begin at once, and to be completed by September, 1915. This district begins near Finger, Tenn., and goes to line of Madison county.

**Houston, Tex.**—City Council has ordered a \$5,062 motor-driven automatic street sprinkler and flusher from Mosehart & Keller Automobile Co., of Houston. It will arrive within next 60 days. Present mule-drawn sprinkler will be disposed of. The new motor-driven sprinkler will have capacity of 1,125 gallons. On account of its speed it will be able to do same work done by several mule-drawn sprinklers in same length of time. City has also ordered one-ton and a two-ton

Kelley-Springfield motor truck. Trucks are equipped with steel dumping bodies and hydraulic hoists. The one-ton truck cost \$2,926 and two-ton truck cost \$3,574. Motor trucks will be used on street cleaning work.

**Kingsville, Tex.**—Contract for building new Kleberg County court house and county hospital has been awarded to Central Contracting Co., of Houston. Cost of two buildings will be in neighborhood of \$113,000, and will be up-to-date in every respect.

**San Antonio, Tex.**—Mayor Brown has signed contract with San Antonio Sand Co. to deliver to city maximum of 7,500 cu. yds. of sand at 67 cts. a cub. yd. f. o. b. San Antonio. Contract with Long-Bell Lumber Co. for delivery of from 75,000 to 100,000 sq. yds. of creosoted wood blocks at \$1.60 a sq. yd. will also be signed shortly.

#### PROPOSALS

##### STREET DEPARTMENT

Charleston, S. C., April 16, 1914.

Sealed Proposals in duplicate will be received at this office until 8 P. M., Tuesday, May 5, 1914, for 65,000 square yards more or less of paving on concrete base, of which it is estimated that 20,000 sq. yds. to 25,000 sq. yds. will be Creosoted Wood Block, and the remainder Sheet Asphalt, Asphaltic or Bituminous Concrete or Bitulithic. Specifications will be furnished prospective Bidders upon receipt of \$10.00 as guarantee for their return. The right is reserved to reject any or all bids.

J. H. DINGLE,  
City Engineer.

##### NOTICE TO CONTRACTORS.

NOTICE TO CONTRACTORS.—State of New York—Office of the State Commission of Highways, Albany, N. Y.—Pursuant to the provisions of Chapter 30, Laws of 1909, as amended by Chapter 646, Laws of 1911, and Chapter 80, Laws of 1913, sealed proposals will be received by the undersigned, at the office of the State Commission of Highways, No. 55 Lancaster Street, Albany, N. Y., at 1 o'clock p. m., on Friday, May 1st, for the furnishing and delivering of Bituminous materials "A" and "T" in the different counties comprising Divisions Nos. 1, 2, 3, 4, 5, 6, 7, 8, and 9. Tables and specifications may be seen and obtained at the office of the Commission in Albany, N. Y. The especial attention of bidders is called to the fact that separate proposals will be received for each division for the furnishing and delivering of Bituminous materials "A" and "T," as designated in detail by divisions and delivery points on tables prepared for that purpose.

Each proposal must be accompanied by a draft or certified check issued by a national or State bank in good credit within the state and payable at sight to the order of the State Commission of Highways, for an amount equal to at least five (5) per centum of the amount of the proposal which such draft or check accompanied. This draft or check will be held by the Commission until the contract is executed, the bond is filed or certified check deposited.

The successful bidder on each proposal will be required to give a certified check or a bond for ten per centum of the amount of the contract, such bond to be executed by a surety company to be approved by the Commission. The certified check or bond is for the purpose of insuring the delivery of the Bituminous Material as called for by the Commission. The right is reserved to reject any or all bids.

JOHN N. CARLISLE,  
Commissioner.  
R. K. FULLER,  
Secretary.